H12063

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No.

Registry No. H12063

LOCALITY

State Alaska

General Locality Chatham Strait

Sublocality Southern Tebenkof Bay

2010

CHIEF OF PARTY

Captain David O. Neander, NOAA

LIBRARY & ARCHIVES

DATE

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTRY No

H12063

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

FIELD No:

State: **Alaska**

General Locality: **Chatham Strait**

Sub-Locality: **Southern Tebenkof Bay**

Scale: **1:20,000** Date of Survey: **October 05, 2010 - November 8, 2010**

Instructions dated: **2/24/2010** Project No.: **OPR-O322-FA-10**

Vessel(s): **FA Launches 2806, 2807 and 2808, Ambar 2302, Skiff 1905, FRB 2301**

Chief of party: **Captain David O. Neander, NOAA**

Surveyed by: **FAIRWEATHER Personnel**

Soundings by: **Reson 8125, Reson 7125**

SAR by: **Adam Argento** Compilation by: **Katie Reser**

Soundings compiled in: **Fathoms**

REMARKS: **All times are UTC. UTM Zone 8N.**

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. Revisions and end notes in red were generated during office processing. The processing branch concurs with all information and recommendations in the DR unless otherwise noted. Page numbering may be interrupted or non sequential.

All pertinent records for this survey, including the Descriptive Report, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

Descriptive Report
H12063

OPR-O322-FA-10
Chatham Strait, Alaska

Scale: 1:20,000
05 October 2010 - 08 November 2010
NOAA Ship *Fairweather*
CAPT David O. Neander

A. Area Surveyed

A1. Survey Purpose

The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. This project responds to requests from United States Coast Guard (USCG). Chatham Strait is a major transit corridor for vessels in southeast Alaska. Vessels that are too large for Wrangell Narrows and Keku Strait, as well as vessels avoiding storms in the Gulf of Alaska transit through Chatham Strait.

A2. Area Description

The survey area is located in Chatham Strait, AK, within the sub-locality of Southern Tebenkof Bay (Figure 1).

A3. Survey Statistics

Main scheme and crossline mileage for MBES and shoreline acquisition were calculated and displayed in Table 1.

MAIN SCHEME - Mileage		
	0	**Single Beam MS**
	927.84	**Multibeam MS mileage**
		0.00 FAIRWEATHER S-220
		0.00 Launch 2805
		293.80 Launch 2806
		332.37 Launch 2807
		301.67 Launch 2808
	0	**SideScan MS**
	927.84	**Total MS**
CROSSLINE - Mileage		
	0	**Single Beam XL**
	46.41	**Multibeam XL**
		0.00 FAIRWEATHER S-220
		0.00 Launch 2805
		22.88 Launch 2806
		17.15 Launch 2807
		6.38 Launch 2808
	46.41	**Total XL**
OTHER		
	0	**Developments/AWOIS - Mileage**
	56	**Shoreline/Nearshore Investigation - Mileage**
	47	**Total # of Investigated Items**
	29	**Total Bottom Samples**
	22.48	**Total SNM**
October 2010: 5-11, 12-15, 24-25, 27-28 November 2010: 2-6, 8		**Specific Dates of Acquisition**
278-284, 285-288, 297-298, 300-301, 306-310, 312		**Specific Dn#s of Acquisition**

Table 1: H12063 Survey Statistics

A4. Survey Quality

The entire survey is adequate to supersede previous data.[1]

A5. Survey Limits

Survey Limits were fulfilled as assigned.

A6. Survey Coverage

Coverage Area or Water Depth	Coverage Required
4 to 8 meters water depth	25 m-spaced MB or VBES lines
> 8 meters water depth	Complete MB

Survey coverage was completed as assigned.[2]

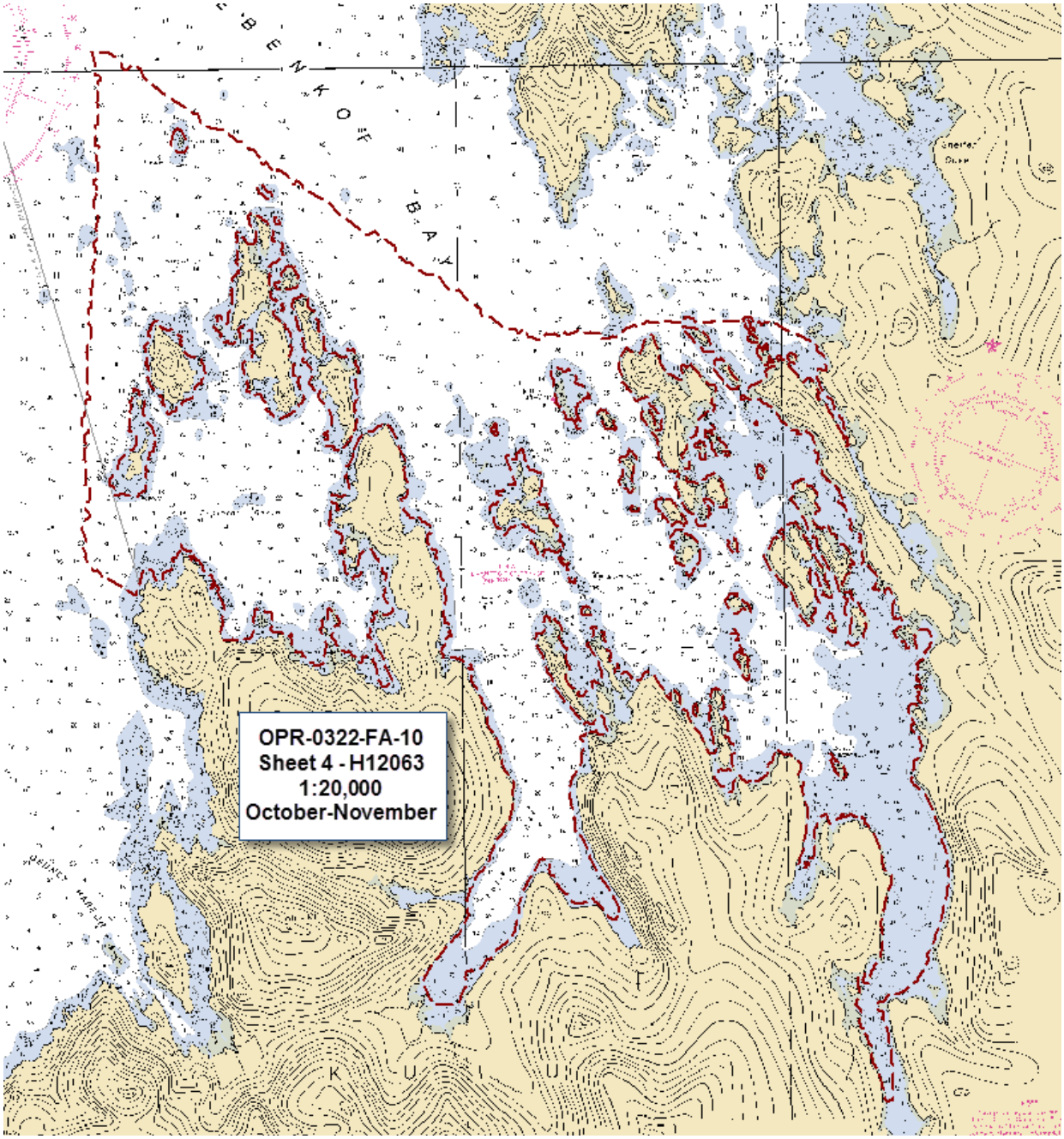


Figure 1: H12063 Survey Outline

A7. Shoreline Requirements

Shoreline requirements were fulfilled as assigned.

A8. Bottom Samples

Bottom Samples were not fulfilled as assigned.

Change Explanation	Documentation
Due to time constraints and weather conditions bottom samples were not collected in accordance to HSSD and the FPM.	Not applicable.

B. Data Acquisition and Processing

B1. Equipment

Vessel Name	Launch 2806	Launch 2807	Launch 2808	Ambar 700	Skiff	FRB
Hull Number	2806	2807	2808	2302	1905	2301
Builder	All American Marine	All American Marine	All American Marine	Marine Silverships, Inc	SeaArk	Zodiak of North America
Length Overall	8.64 m (28' 6")	8.64 m (28' 6")	8.64 m (28' 6")	7.0 m (23')	5.79 m (19')	6.7 m (22')
Beam	3.48 m (11' 5")	3.48 m (11' 5")	3.48 m (11' 5")	2.9 m (9' 4")	2.44 m (8')	2.6 m (8'6")
Draft, Maximum	1.12 m (3' 8")	1.12 m (3' 8")	1.12 m (3' 8")	0.4 m (1' 4")	0.66 m (1' 2")	0.6 m (22")
Cruising Speed	24 knots	24 knots	24 knots	22 knots	25 knots	18 knots
Max Survey Speed	8 knots	8 knots	8 knots			
Primary Echo-sounder(s)	RESON 7125	RESON 7125	RESON 7125, RESON 8125			
Sound Velocity Equipment	SBE 19plus, SVP71	SBE 19plus, SVP71	SBE 19plus, SVP71, Digibar Pro			
Attitude & Positioning Equipment	POS/MV V4	POS/MV V4	POS/MV V4			
Type of operation	MBES	MBES	MBES	Shoreline, Shore Station	Shoreline, Shore Station	Shoreline, Shore Station

Table 2: Vessel Inventory

B2. Quality Control

Crosslines

Percentage of crossline miles as compared to mainscheme miles: 5%[3]

Surface differencing in CARIS Bathy DataBASE was used to assess crossline agreement with main scheme lines. Figure 2 depicts a difference surface between an 4-meter surface made with main scheme lines only and an 4-meter surface made with crosslines only. This difference surface is submitted digitally in the in Separates IV folder.

The areas with the greatest disagreement between crosslines and main scheme lines are areas where the seafloor is very dynamic.[4] Areas in the survey where this is most prevalent are outlined in black in Figure 2.

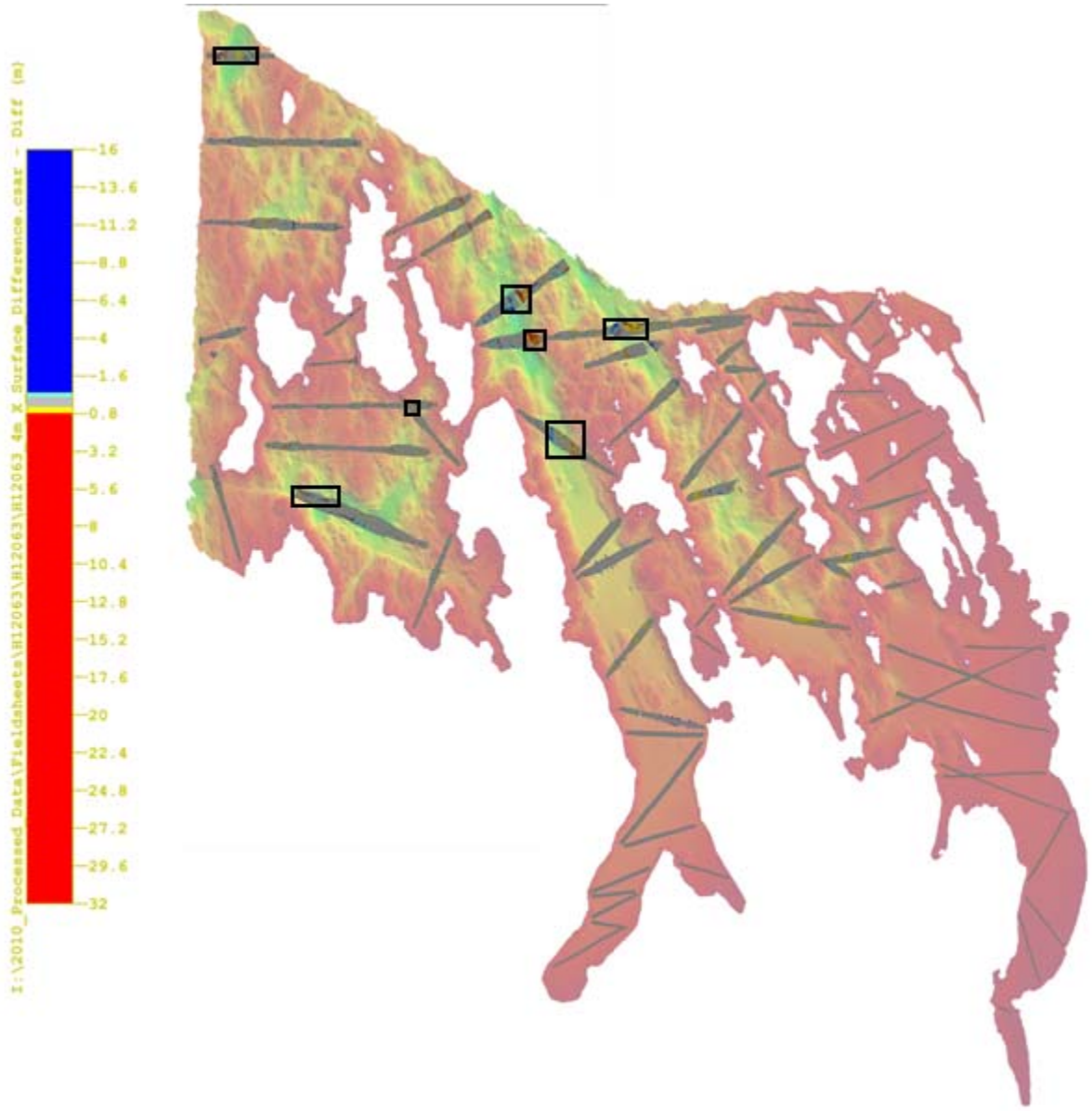


Figure 2: Crossline and main scheme differences (gray indicates agreement, cool colors indicate crosslines shoaler than main scheme and warm colors indicate crosslines are deeper).

Uncertainty Values

Tide Values

Measured	Zoning
0.01	0.13

Sound Speed Values

Vessel	Instrument	Measured (m/s)	Surface (m/s)	Comments
2806	CTD	1.0	0.5	
2807	CTD	1.0	0.5	
2808	CTD	1.0	0.5	

Junctions

Registry Number:	H12183
Scale:	20000
Year:	2010
Platform:	NOAA Ship *Fairweather*
Relative Location:	W
Comments:	The areas of overlap between the adjacent sheets were reviewed in CARIS Subset Editor for sounding consistency. The soundings are in agreement within one meter. The junction agreement is within the total allowable vertical and horizontal uncertainty in their common areas and depths.[5]

Registry Number:	H12185
Scale:	20000
Year:	2010
Platform:	NOAA Ship *Fairweather*
Relative Location:	N
Comments:	The areas of overlap between the adjacent sheets were reviewed in CARIS Subset Editor for sounding consistency. The soundings are in agreement within one meter. The junction agreement is within the total allowable vertical and horizontal uncertainty in their common areas and depths.[6]

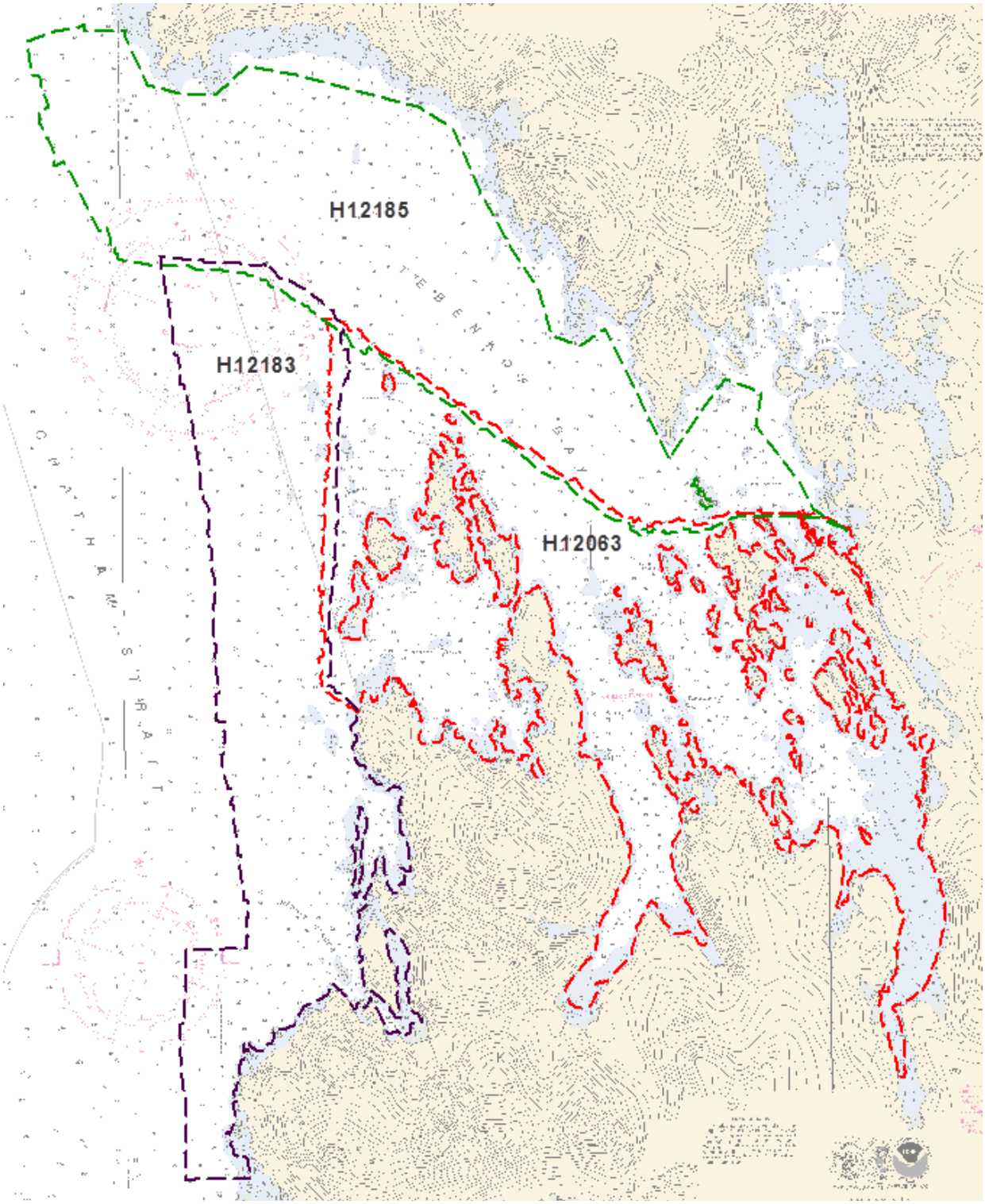


Figure 3: Junctions between H12063, H12183, H12185

Sonar System Quality Control Checks

The MBES quality control checks were conducted as discussed in the quality control section of the DAPR.

Equipment Operational Effectiveness

Reson 8125 Roll Artifact

A roll artifact is apparent in some Reson 8125 data, located predominantly in surfaces to the west and northwest of the Windfall Islands as well as to the east side of Explorer Basin and south of Step Island. The artifact is thought to be due to disabled roll stabilization in the Reson 8125 processor set-up. The areas were manually cleaned in CARIS Subset Editor to remove all spurious soundings. The finalized surfaces follow the soundings more closely (Figure 4 and 5) as opposed to the 8-meter combined surface (Figure 6) that trends toward the shoaler soundings.[7]

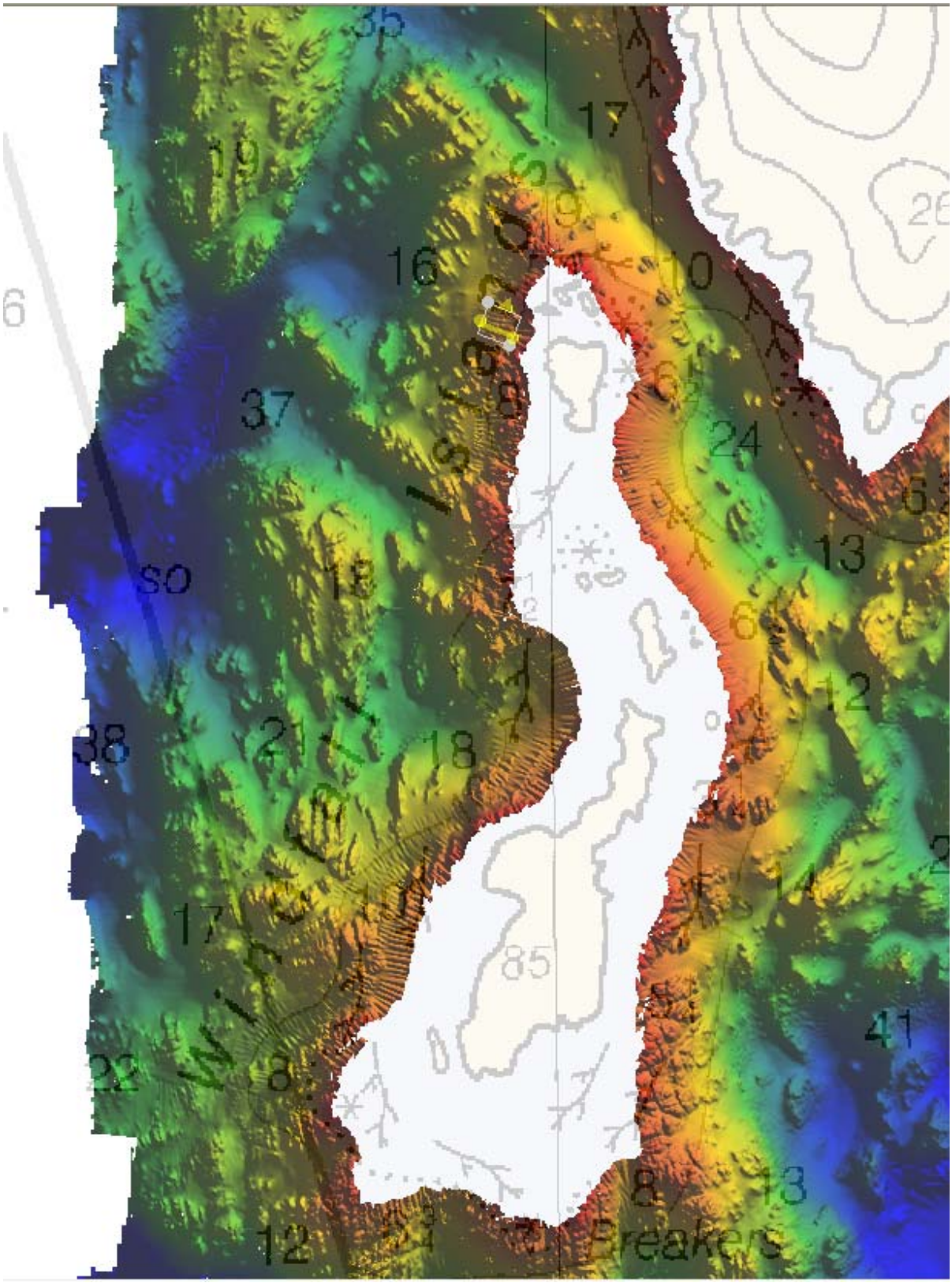


Figure 4: Reson 8125 roll artifact found predominantly in the 1-meter finalized surface near Windfall Island. Vertical exaggeration is 5.

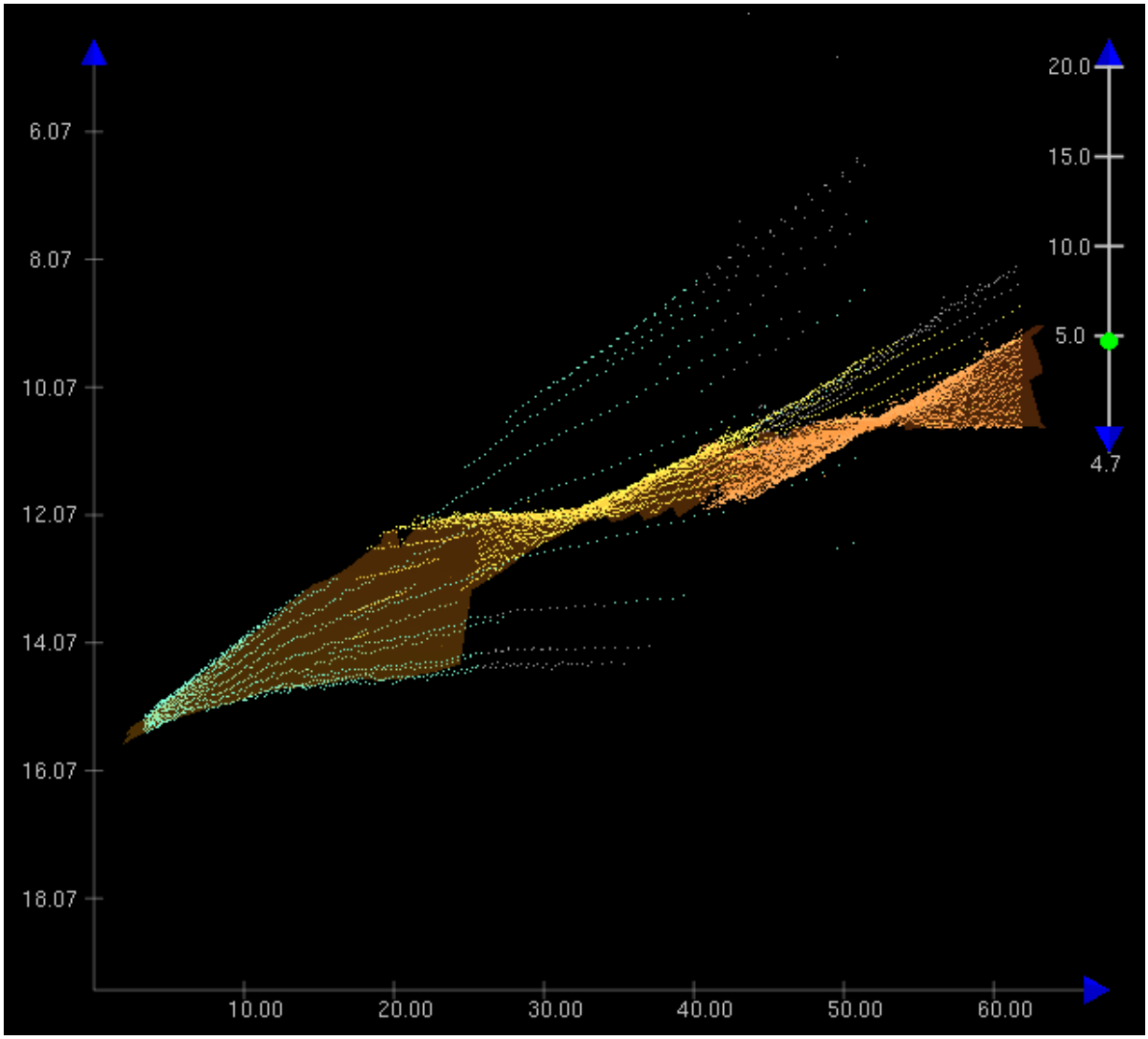


Figure 5: Roll artifact, located in Figure 4's Subset Editor box. Launch 2808 roll attribute value is 11 degrees to port and starboard.

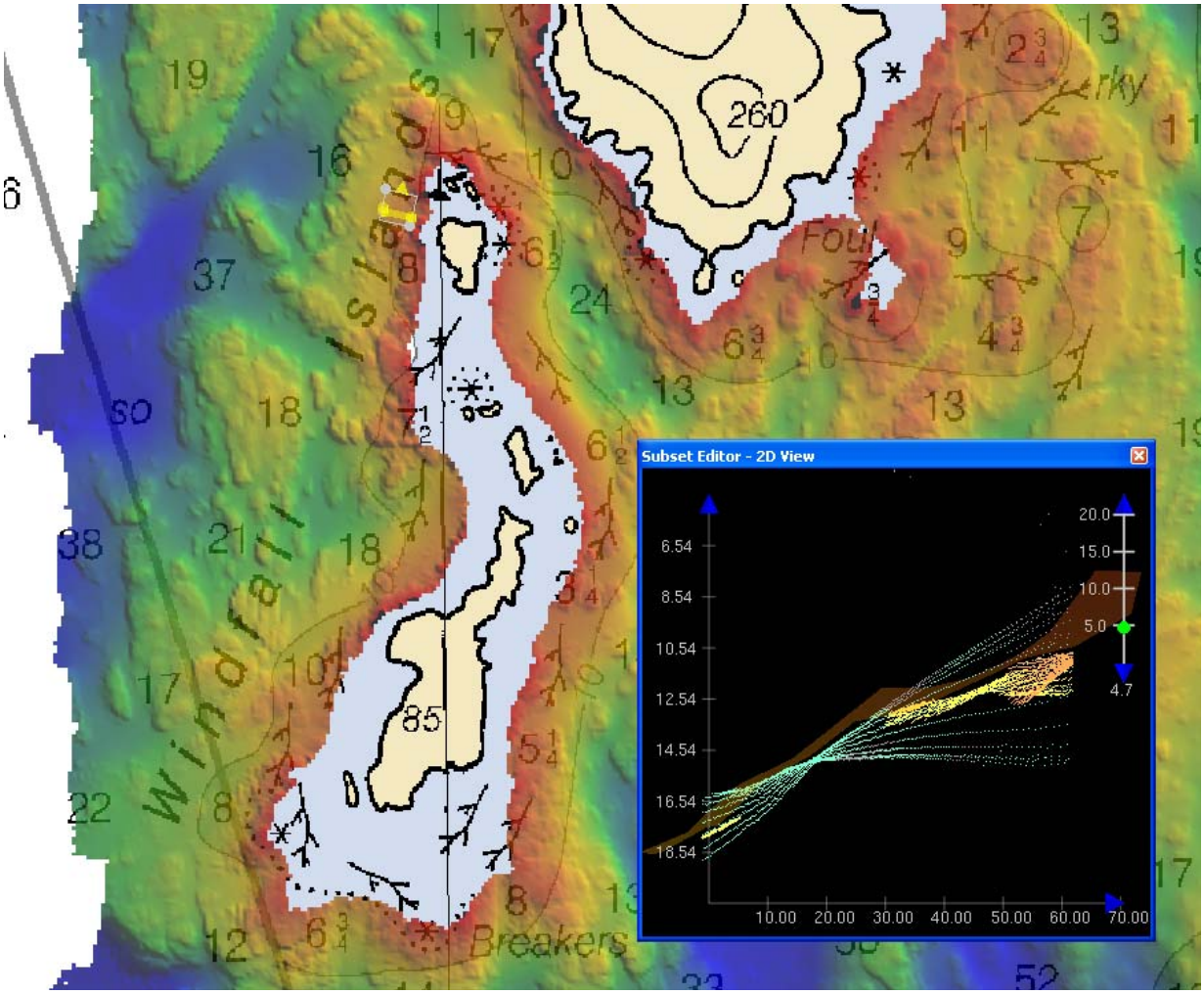


Figure 6: Reson 8125 roll artifact shown in the 8-meter combined surface that trends toward the shoaler soundings.

Environmental and Other Factors Affecting Sounding Corrections

Kelp in the Digibar Surface Sound Speed Sensor

Due to large amounts of kelp in the near shore area, the surface sound speed sensor on Launch 2808 frequently recorded erroneous surface sound speed measurements resulting in distorted sounding data. The surface sound speed files (SSP) were removed from all the tilted head Reson 8125 CARIS HDCS line file folders and the sound speed profiles from the CTD alone were used for ray-tracing instead. This eliminated the sound speed artifacts initially observed in the MBES data.[8]

Vertical Tide Offset

Vertical tide offsets ranging from 10 to 40 centimeters are found between main scheme data and crosslines from Launch 2806 on DN 310 in the eastern half of H12063 but the disagreement is within the total allowable vertical uncertainty of the depth range.[9]

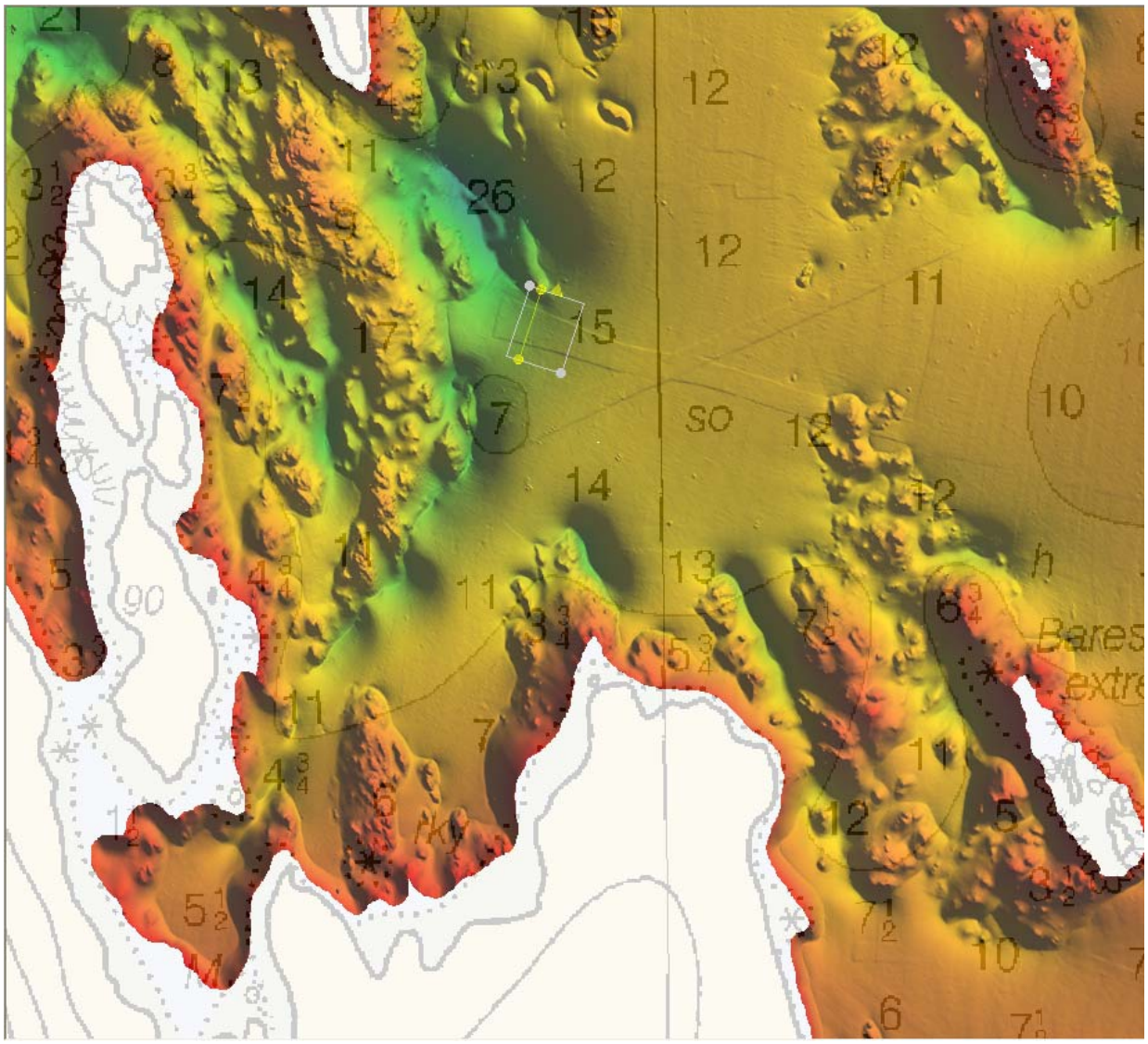


Figure 7: Example of vertical tide offset found northwest of Petrof Bay. Crossline in CARIS Subset Editor box was acquired by Launch 2806 on DN 310 and main scheme lines were acquired by Launch 2807 on DN 278. Vertical exaggeration is 5.

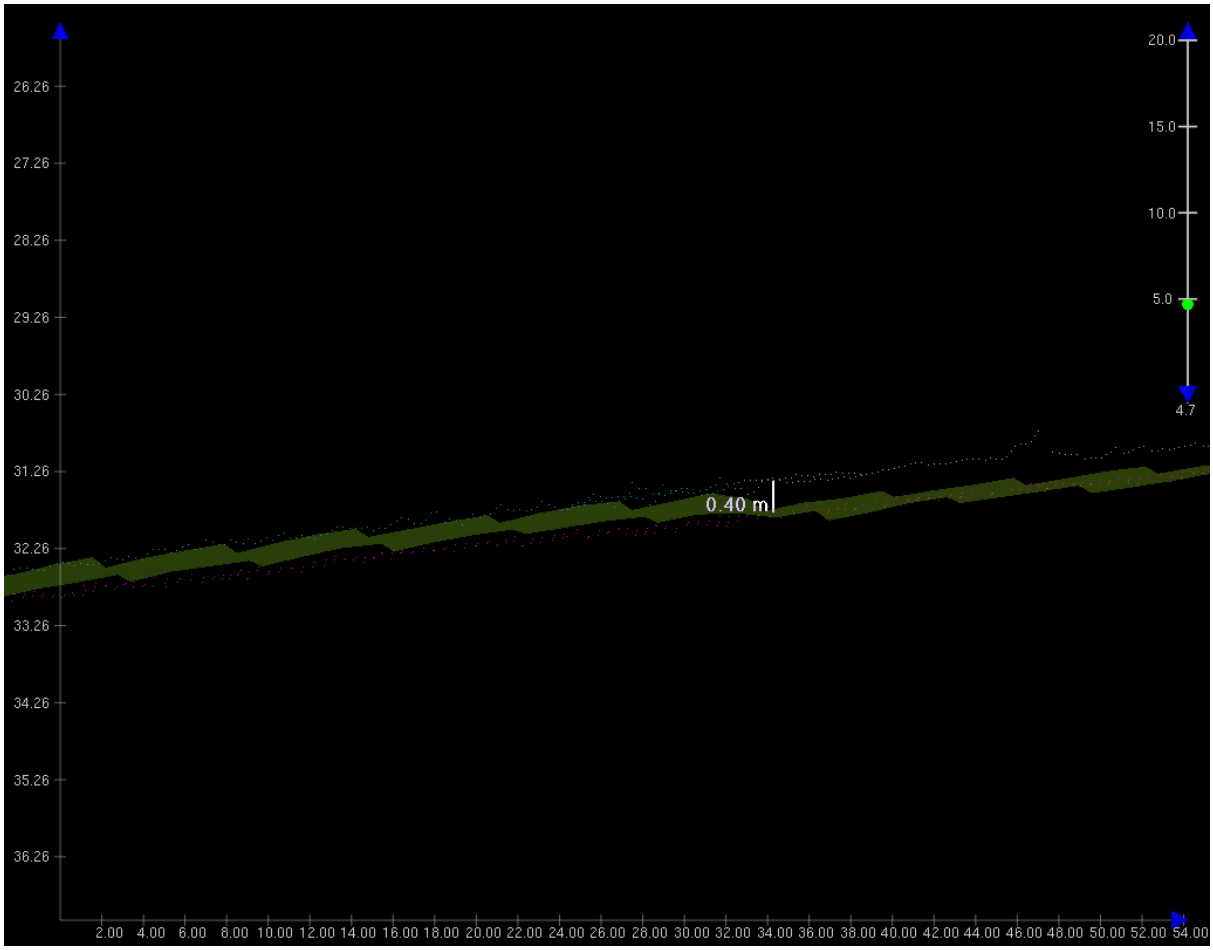


Figure 8: Vertical tide offset of 40 centimeters northwest of Petrof Bay, located in Figure 7's Subset Editor box.

Sound Speed Artifacts

On DN 283 Launch 2808 acquired MBES data in the southeast portion of Explorer Basin but did not take an SVP cast which resulted in sound speed artifacts exclusively in the southeast portion of Explorer Basin. Casts 2010_283_170637 as well as 2010_283_225319 collected by Launch 2806 on DN 283 were both applied on separate occasions to localized lines (Figure 9), but the SV artifact was not resolved (Figure 10). The concatenated file from Launch 2808 was reapplied to launch lines. Generally the depth ranges from eight to twelve meters. The areas were manually cleaned in CARIS Subset Editor to remove all spurious soundings. Refraction artifacts of up to seven meters were seen between outer beams. Despite this issue the Hydrographer feels the soundings are adequate to supersede charted soundings in this area.[10]

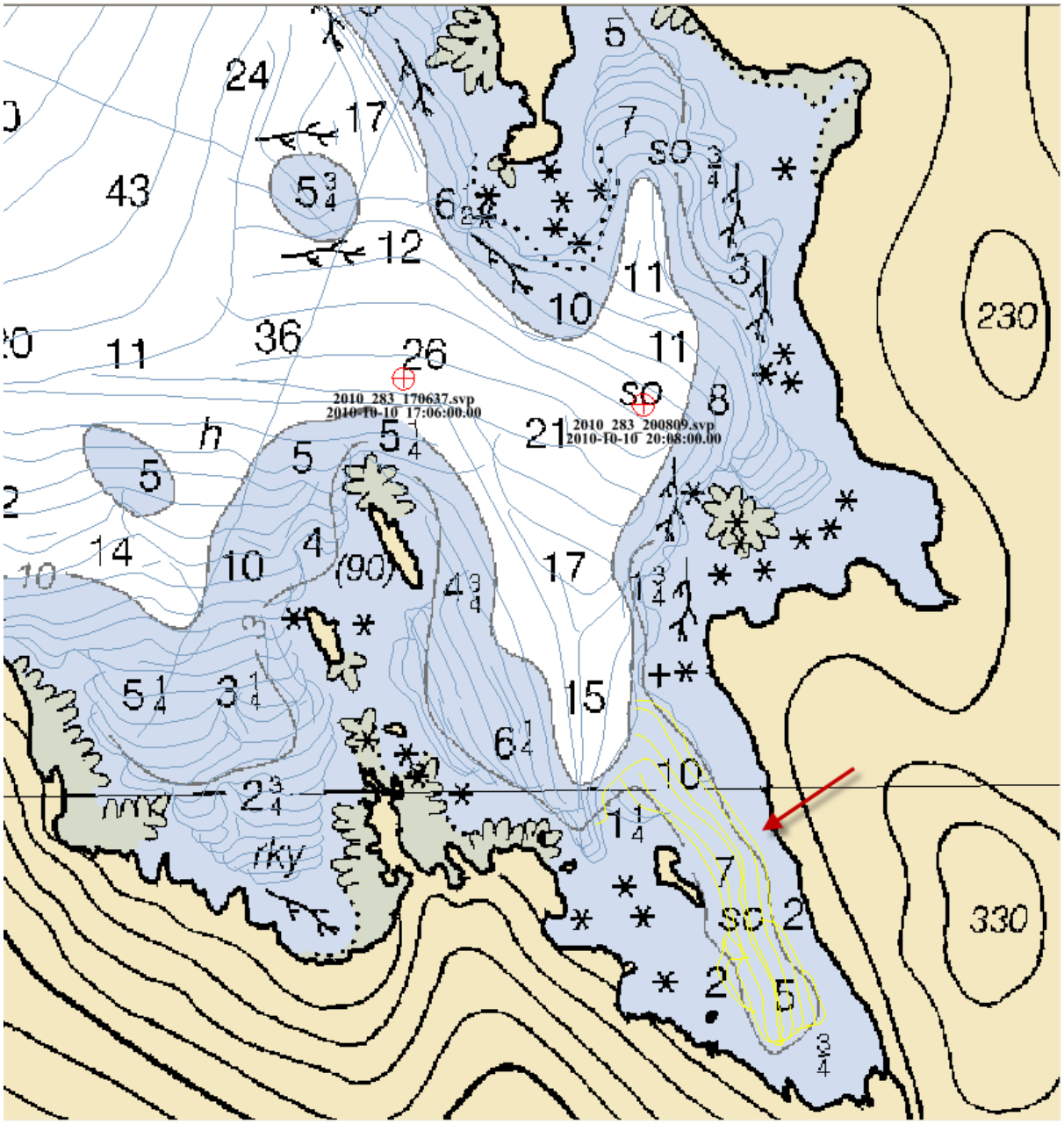


Figure 9: Sound speed casts in southeast Explorer Basin acquired on DN 283 by Launch 2808. Launch 2808 lines, with SV artifact, are highlighted in yellow.

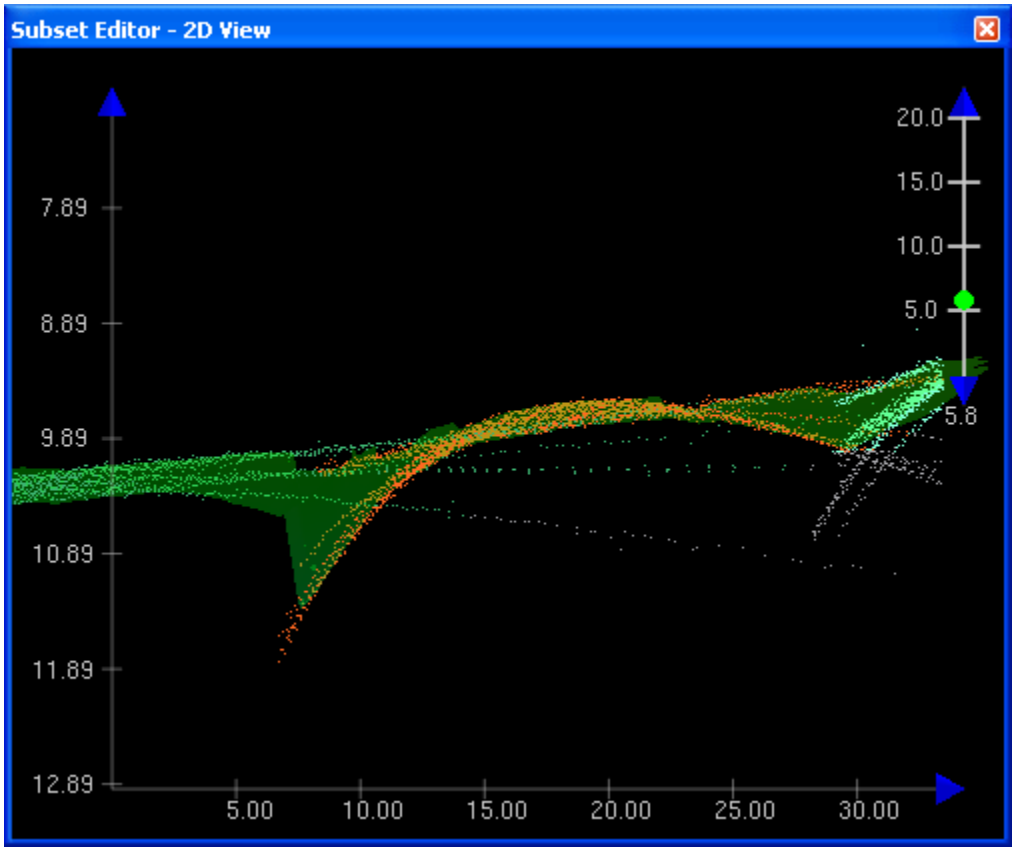


Figure 10: Sound speed error present in southeast Explorer Basin collected on DN 283 from the side mounted 8125.

Sound speed measurements were conducted and applied as discussed in the Corrections to Echo Soundings section of the DAPR.

On DN 278 the CTD aboard Launch 2807 was inoperable so the concatenated SVP file acquired from Launch 2806 was used to correct Launch 2807's MBES data acquired on DN 278. Launch 2806 acquired CTD casts in the adjacent bay on DN 278; Thetis Bay (Figure 11). The method of Nearest in Distance within Time (3 hours) was used to process Launch 2807's DN 278 lines successfully.[11]

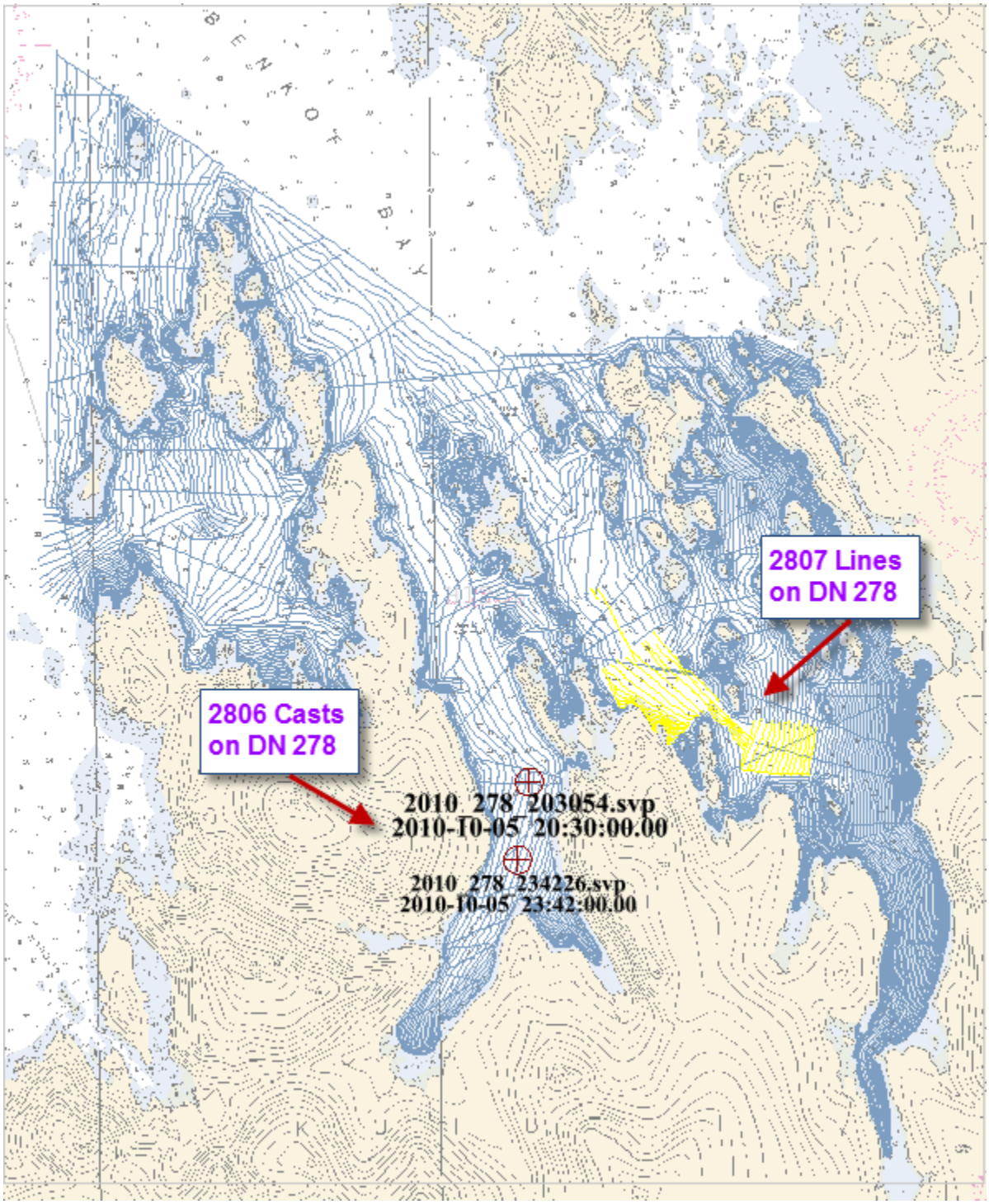


Figure 11: Sound speed casts for Launch 2807 acquired by 2806 in adjacent bay on DN 278. Launch 2807 lines are highlighted in yellow.

Equipment and Methods

There are no survey specific object detection methods or deviations from specifications. See DAPR.

Additional Quality Control Discussion

Holiday Assessment

Complete multibeam coverage was obtained within the limits of H12063.[12] For holidays larger than three surface grid nodes, the corresponding multibeam side scan was examined and one navigationally significant item was found. The least depths of all other navigationally significant features are represented by H12063.[13]

The navigationally significant feature not represented was due to a holiday created on the top of a rock by line spacing being too far apart east of East Island (figure 12 and 13). On the last day of field operations MBES data acquisition was attempted over the rock but was unsuccessful due to low tides at the time of acquisition.[14]

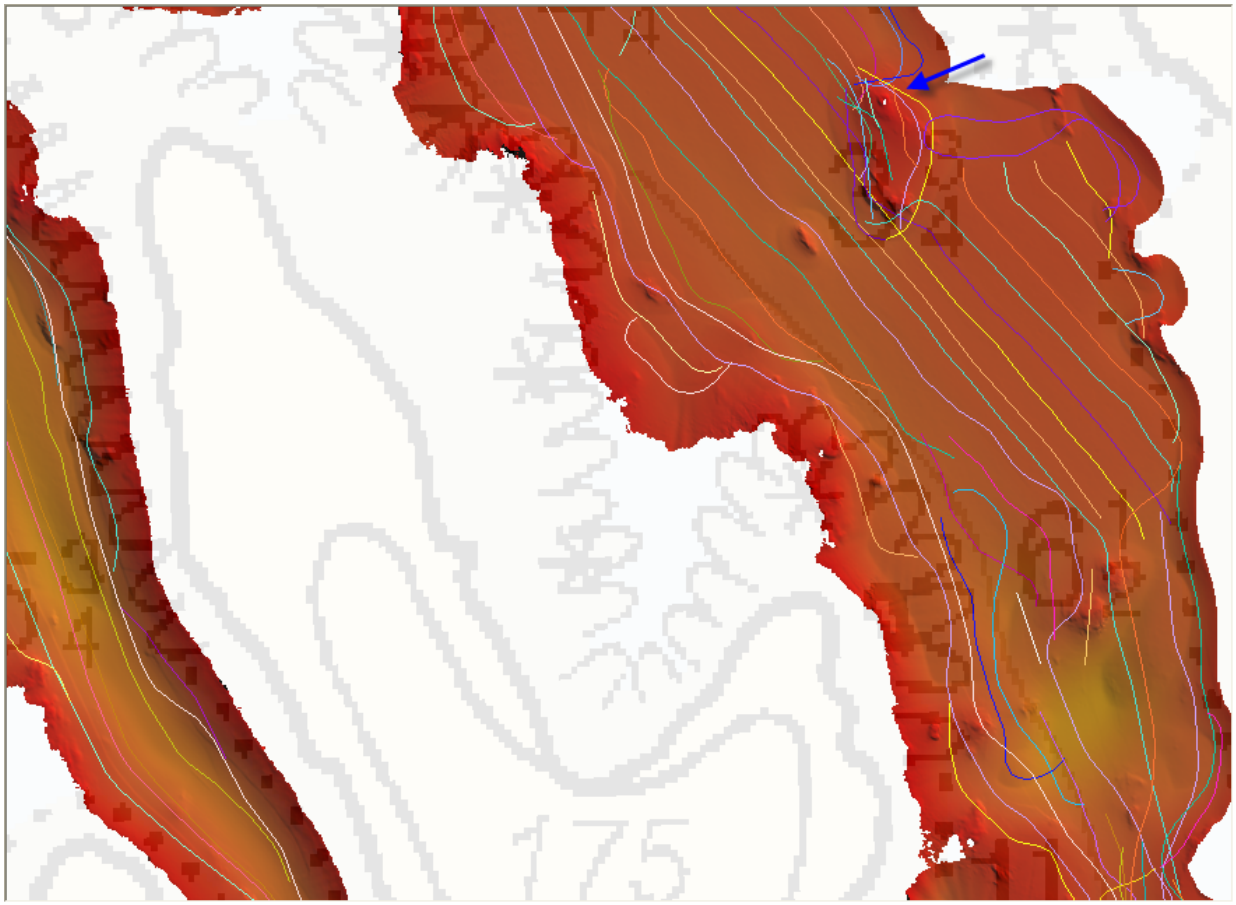


Figure 12: Navigationally significant feature creating holiday east of East Island missing the top of the rock which does not have the least depth represented.

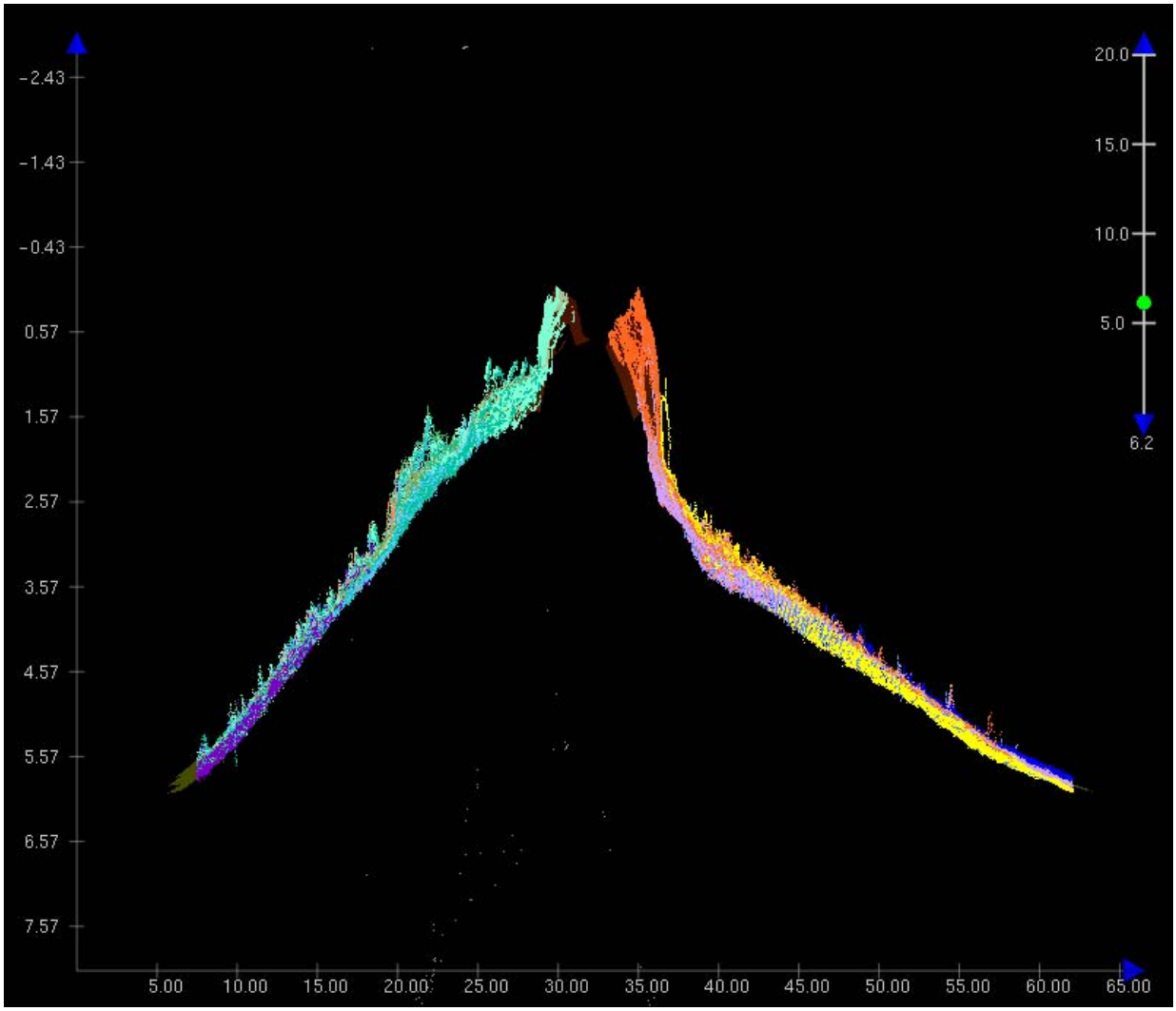


Figure 13: Line spacing too far apart creating holiday east of East Island, missing the top of the rock; shown in subset.

Two other holidays were created due to line spacing being too far apart; one southwest of Oyster Rock (Figures 14 and 15) and another being inside a new foul area south of a small islet SSE of Step Island (Figures 16 and 17). Both holidays are in areas where the seafloor surface trend was sloping downward so the Hydrographer believes the least depth is accurately represented.[15]

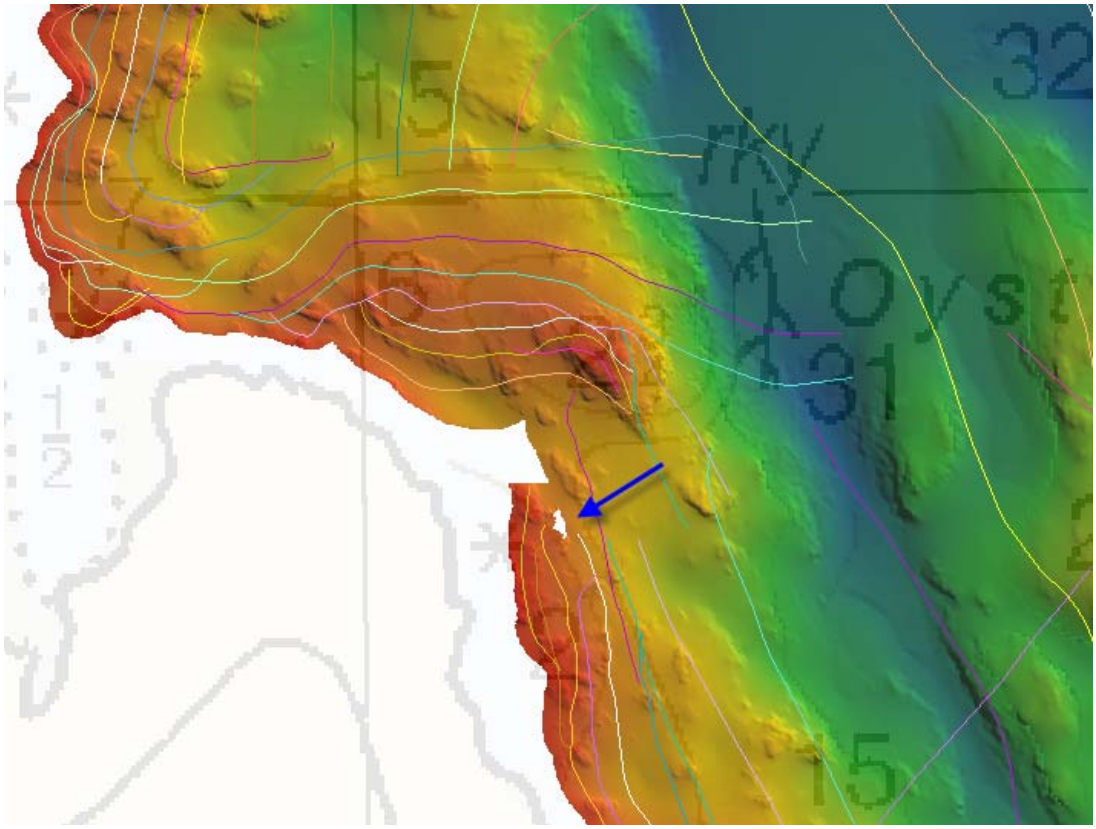


Figure 14: Line spacing too far apart creating holiday southwest of Oyster Rock has the least depth represented.

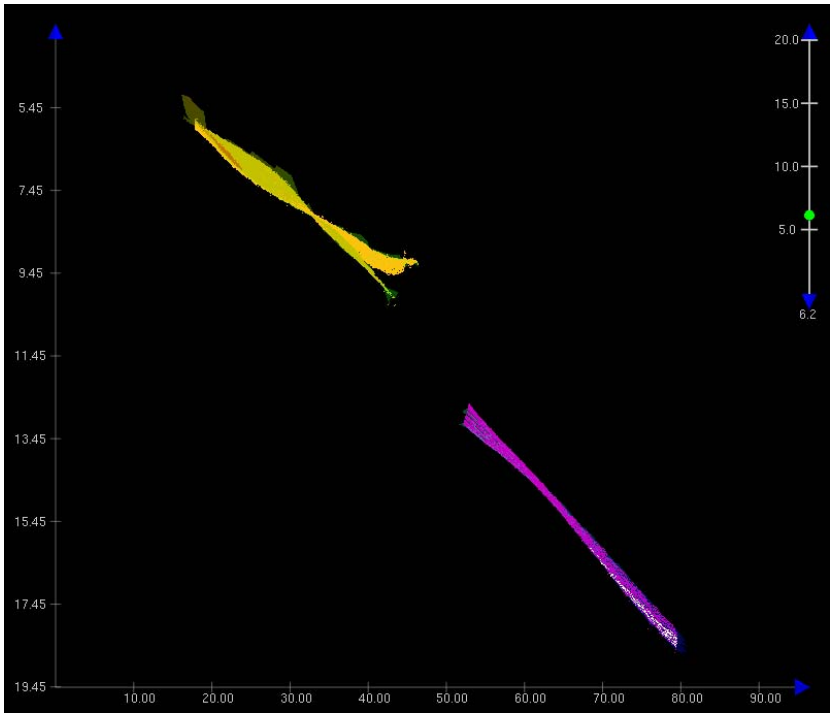


Figure 15: Line spacing too far apart creating holiday east of Oyster Rock; shown in subset.

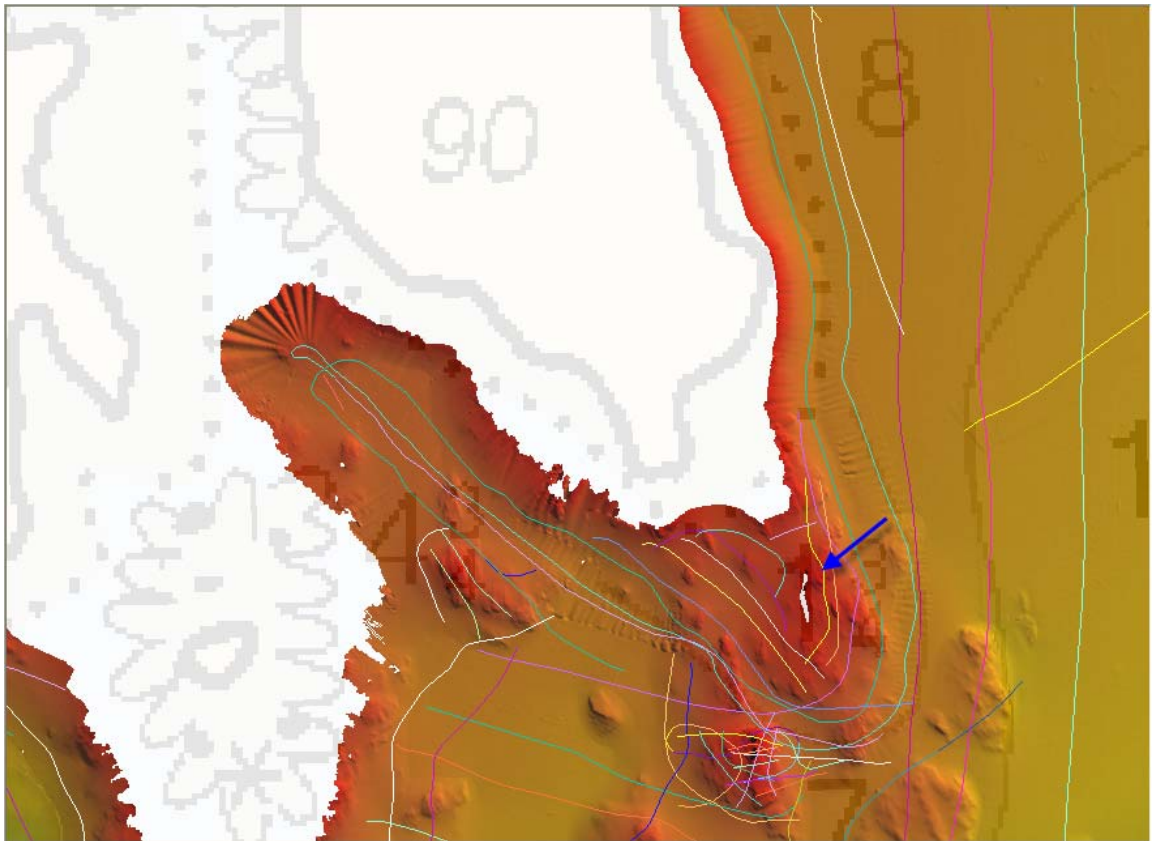


Figure 16: Line spacing holiday too far apart creating holiday south of small islet SSE of Step Island, has the least depth represented. Acquisition was acquired on last day of field operations near feature.

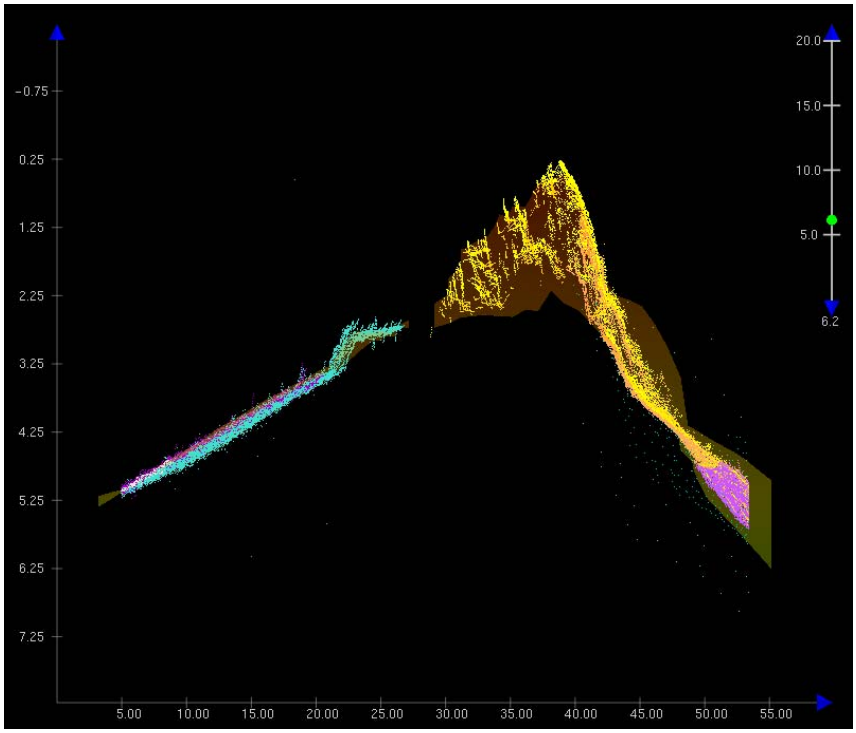


Figure 17: Line spacing is too far apart creating a holiday off a small islet SSE of Step Island. The side of the rock is the location of the holiday, the least depth is represented as shown in subset.

Several small acoustic shadow holidays created from beams not reaching downslope of features were created predominantly in the zero to 22 meter depth range on the eastern portion of H12063.[16] See Figure 18 and 19 for example.

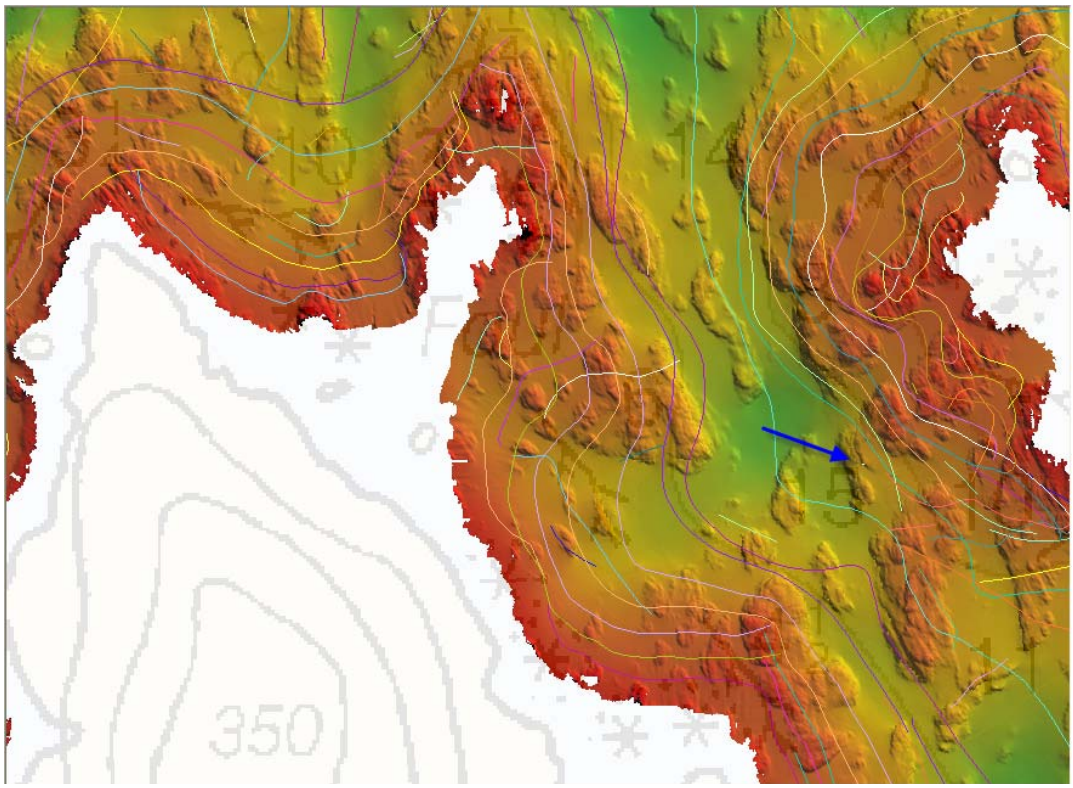


Figure 18: Example of acoustic shadow creating holiday in northern pass of Windfall Islands has the least depth represented.

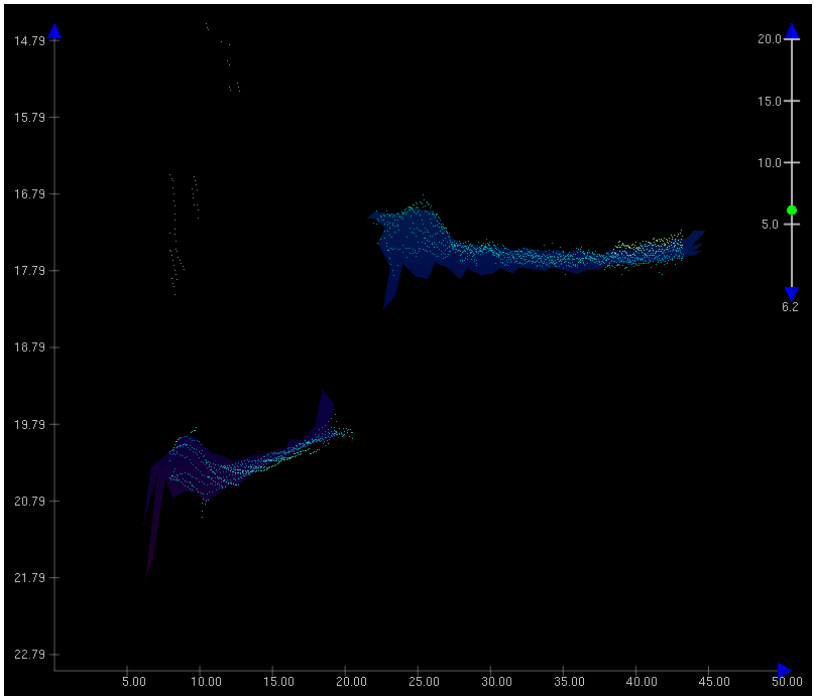


Figure 19: Area of downslope creating holiday in northern pass of Windfall Islands; shown in subset.

A Hypack dropout holiday was created south of the islet SSE of Step Island, (Figure 20) where the seafloor surface trend is slopping downward.

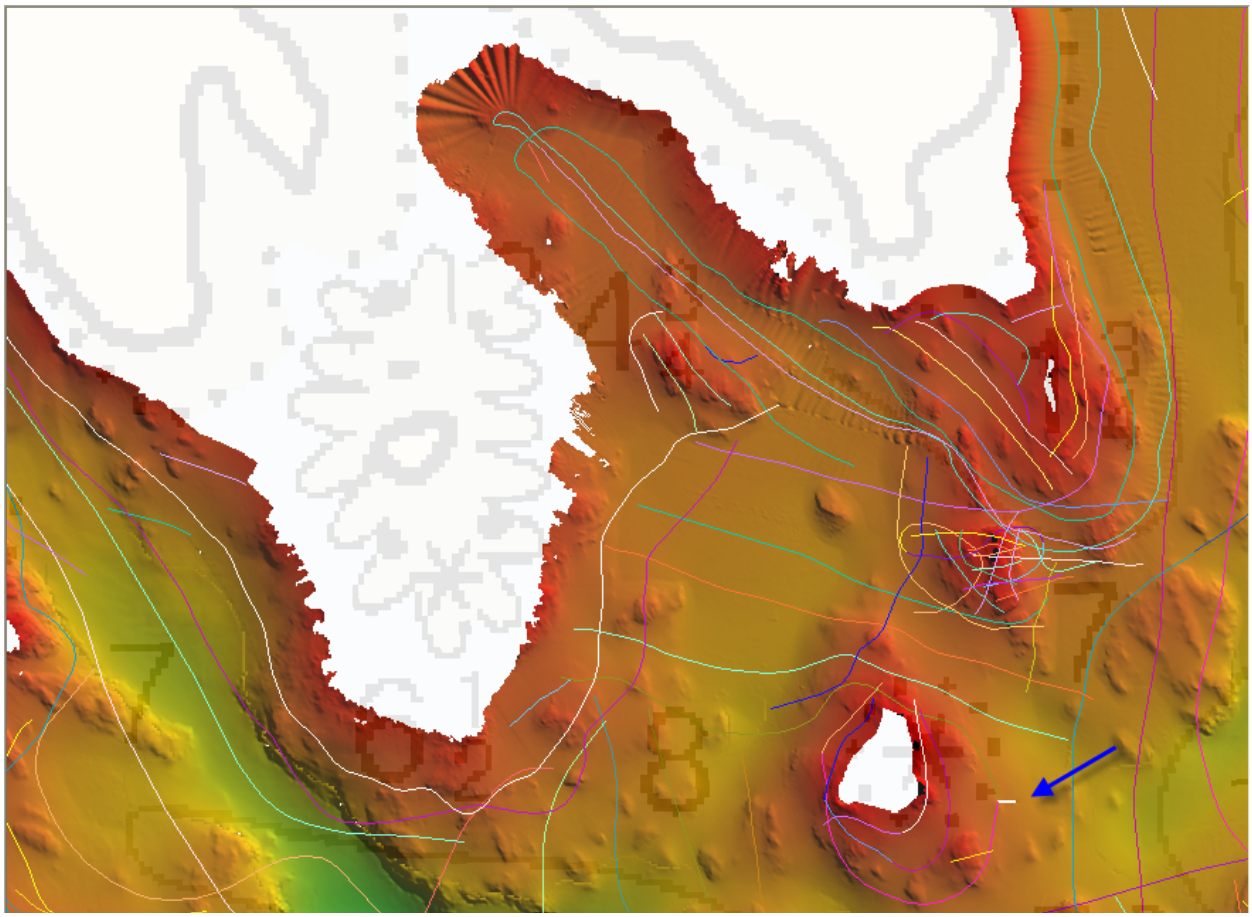


Figure 20: Hypack dropout creating holiday to south of islet which is SSE of Step Island, missing data on gradually slopping seafloor has the least depth represented.

IHO Uncertainty

All data meet the data accuracy specifications as stated in the NOS Hydrographic Surveys Specifications and Deliverables (HSSD) dated April 2010.[17]

At least 99.05% of nodes in each finalized surface have uncertainty values less than that allowed by IHO Order 1 specifications for all depths of survey H12063. To assess vertical accuracy standards, a child layer titled "IHO_1" was created for each of the 1-meter, 2-meter, 4-meter, and 8-meter finalized surfaces using the equation as stated in section 2.1 of the DAPR. See the Standard Compliance Review in Appendix V.

Density

Density requirements for H12063 were achieved with at least 97.83% of finalized surface nodes containing five or more soundings. See Standard Compliance Review in Appendix V.

B3. Corrections to Echo Soundings

Echo Sounding Correction DAPR Deviations

Data reduction procedures for survey H12063 conform to those detailed in the DAPR except where noted in this report.

Sounding System Calibration DAPR Deviations

There are no survey specific sounding system calibration deviations. See DAPR.

B4. Data Processing

Processing Software

Software Used	Version	Service Pack	Hotfix	Used For
Caris HIPS/SIPS	7.0	2	3, 4, 5	Data processing, surface creation, cleaning, soundings, contours
Caris Notebook	3.1		3	Feature management, survey outline
NOAA Pydro	10.9			Tides request, DTON Reporting
Caris Bathy DataBASE	3.0		9	Surface differencing
Applanix PosPAC	5.3			SBETS, Post processed Kinematics

Generated Surfaces and Mosaics[18]

Surface Name	Type	Resolution	Depth Range	Parameter	Purpose
H12063_1m	CUBE	1	N/A	NOAA_1m	Complete MBES
H12063_2m	CUBE	2	N/A	NOAA_2m	Complete MBES
H12063_4m	CUBE	4	N/A	NOAA_4m	Complete MBES
H12063_8m	CUBE	8	N/A	NOAA_8m	Complete MBES
H12063_1m_Final_-10to22	CUBE	1	-10-22	NOAA_1m	Complete MBES
H12063_2m_Final_20to44	CUBE	2	20-44	NOAA_2m	Complete MBES
H12063_4m_Final_40to88	CUBE	4	40-88	NOAA_4m	Complete MBES
H12063_8m_Final_80to176	CUBE	8	80-176	NOAA_8m	Complete MBES
H12063_8m_Combined	CUBE	8	N/A	NOAA_8m	Complete MBES

All field sheet extents were adjusted using the Base 16 Calculator tool to ensure coincident nodes among all bathymetric surfaces regardless of the field sheet in which they are contained given the standard surface resolutions of one, two, four and eight meters. The NOAA CUBE parameters mandated in HSSD were used for the creation of all CUBE BASE surfaces in Survey H12063.

The surfaces have been reviewed where noisy data, or 'fliers' are incorporated into the gridded solution causing the surface to be shoaler than the true seafloor. Where these spurious soundings cause the gridded surface to be shoaler than the reliably measured seabed by greater than the maximum allowable Total Vertical Uncertainty (TVU) at that depth, the noisy data have been rejected and the surface recomputed.

The finalized 1-meter surface extends from -10 to 22 meters to include all the data from the shoalest parts of the survey and to be consistent with the depth brackets of the 1-meter surface defined in section 5.2.2.2 of the HSSD. (All density requirements are met within the 1-meter, finalized surface).

An 8-meter combined surface was created for the purpose of having common grid resolutions while surface differencing between survey junctions. This surface is included for reference only and is not delivered as a product of H12063.

The finalized 1-meter and 2-meter surfaces were finalized using a single core processor as recommended by CARIS to temporarily and immediately address a newly discovered software issue that prevented surfaces with designated sounding to be finalized. See CARIS Help Desk

ticket number 01003085 and email correspondence located in Appendix V.

Additional Data Processing

Data Logs

Data acquisition and processing notes are included in the acquisition and processing logs, and additional processing such as final tide and sound velocity application is noted in the H12063 Data Log spreadsheet. All data logs are submitted digitally in the Separates I folder.

Critical Soundings

Designation of soundings followed procedures as outlined in section 5.1.1.3 of the HSSD.

Survey H12063 requires 84 critical soundings.[19] Thirteen (13) soundings are designated as Dangers to Navigation. Sixty-five (65) soundings are designated to accurately represent the seafloor. Six (6) soundings were flagged as outstanding to be treated as attributed features with the H12063 Final Feature File. One-hundred and ninety-eight (198) soundings are flagged examined to track reviewed non-critical soundings.

True Heave

To enable the application of TrueHeave some POS/MV files were "fixed" using the fixTrueHeave.exe utility from CARIS. Fixed files were assigned an additional *.fixed suffix. This was performed for the following vessels and days: Launch 2806 days 284, 286, 308 and 310; Launch 2807 days 279 and 287; and 2808 days 279, 287 and 301.[20]

TrueHeave data could not be applied to MBES data for Launch 2806, day 282, line 2822356, due to a corrupt file. The MBES data was investigated in CARIS Subset mode and data quality from that day was not affected by the lack of TrueHeave.[21]

C. Vertical and Horizontal Control

C1. Summary of Vertical Control Methods

Vertical Datum:	Mean Lower Low Water (MLLW)
Vertical Resolution:	0.01
Vertical Units:	meters

Tide Stations

Station Number:	945-1054
Station Type:	Primary (NWLON)
Used for Corrections:	Yes

Water Levels Used for Correction:	Final Approved
Tide File(s) Used for Correction:	9451054.tid
Time and Height Correctors:	Final
Zone Corrector File:	H12063CORF.zdf

Tides Submitted	Tides Received[22]
11 / 09 / 2010	12 / 06 / 2010

C2. Summary of Horizontal Control Methods

Horizontal Coordinate System:	UTM 8N
Horizontal Datum:	North American Datum of 1983 (NAD83)
Horizontal Resolution:	0.1
Horizontal Units:	meters

Positioning Method	Positioning Station Name
DGPS	Level Island, AK (295 kHz)
DGPS	Annette Island AK (323 kHz)
PPK	Port Malmesbury
PPK	Troller Island

Differential correctors from the U.S. Coast Guard beacon at Level Island, AK (295 kHz) and Annette Island, AK (323 kHz) were used during real-time acquisition when not otherwise noted in the acquisition logs, and were the sole method of positioning of detached positions (DP) and bottom samples as there is currently no functionality for applying Smoothed Best Estimate of Trajectory (SBET) files to these types of data.

The Post Processed Kinematic (PPK) method is the primary method of positioning of MBES soundings on H12063. Correctors from two GNSS base stations established near Port Malmesbury and near the Troller Islands were used for post processing all vessel-day POSMV files except on DN 306 on Launch 2806 and Launch 2808. For this day the SBET file was created using Precise Point Positioning (PPP). All SBET files and their associated error files (SMRMSG) were applied to the CARIS HDCS data in HIPS and SIPS for improving positioning accuracy.

For further detail regarding the processing and quality control checks performed see the H12063 POSPAC Processing Log spreadsheet located in the SBET folder with the GNSS Data. See also the OPR-O322-FA-10 Horizontal and Vertical Control Report, submitted under separate cover.

D. Results and Recommendations

D1. Chart Comparison

Chart Comparison Methods

Chart comparison procedures were followed as outlined in section 4.5 of the FPM and section 8.1.3-D.1 of the HSSD, utilizing CARIS HIPS and SIPS software program.

Raster Comparison

Number:	17376		
Scale:	40000		
Edition:	35		
Edition Date:	06 / 2008		
Notices:	LNM	52	12 / 29 / 2010

Recommendation: Soundings from survey H12063 generally do not agree within one to two fathoms with charted depths on chart 17376 and contours generated in CARIS HIPS vary generously from the charted three and ten-fathom contours.[23] Throughout the survey there are numerous rocky shoals that are not depicted accurately by the charted depths and contours. Some examples are listed and shown in the figures below. Center of Explorer Basin: a 10-fathom contour surrounds a 10-fathom charted depth with a surveyed sounding of 21-fathoms and a 6 3/4-fathom charted depth with MBES soundings at 17-fathoms (Figure 21). West off the entrance of Petrof Bay: a 10-fathom contour and 7-fathom charted depth was surveyed with MBES at 15-fathoms with no soundings less than 10-fathoms in the area (Figure 22). Southwest of Step Island: 10-fathom contour lines vary generously from surveyed MBES contour lines (Figure 23).

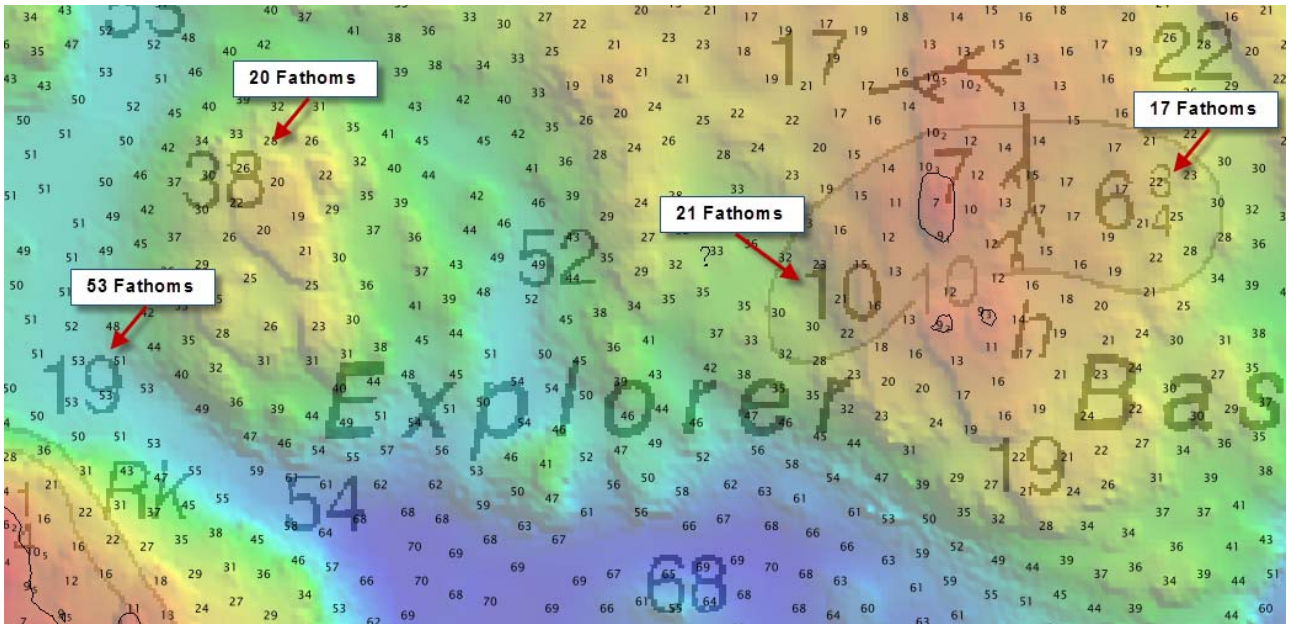


Figure 21: Disagreement between charted depths (17376) and surveyed soundings in the center of Explorer Basin.

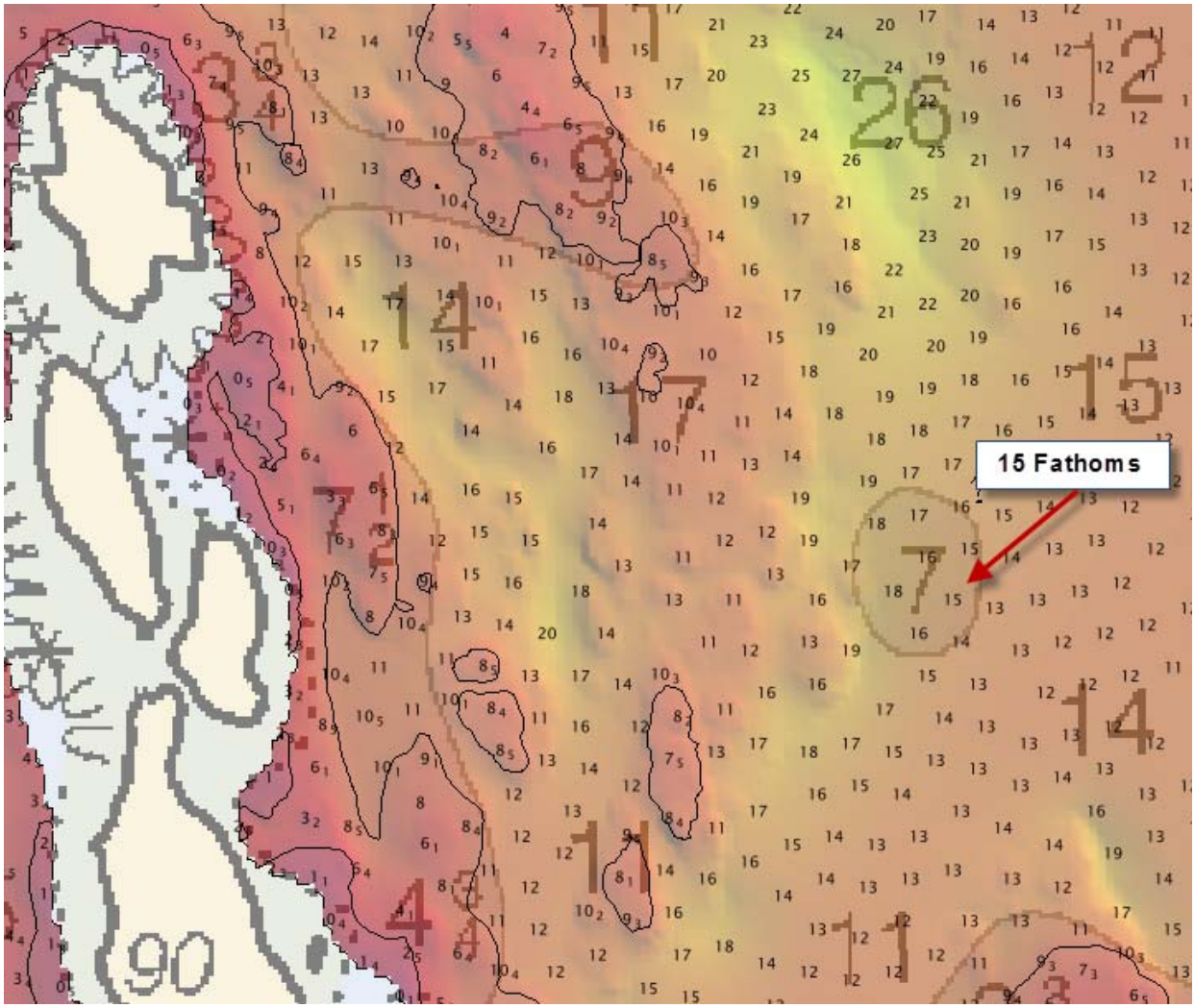


Figure 22: Disagreement between charted depths (17376) and surveyed soundings north of Swain Point.

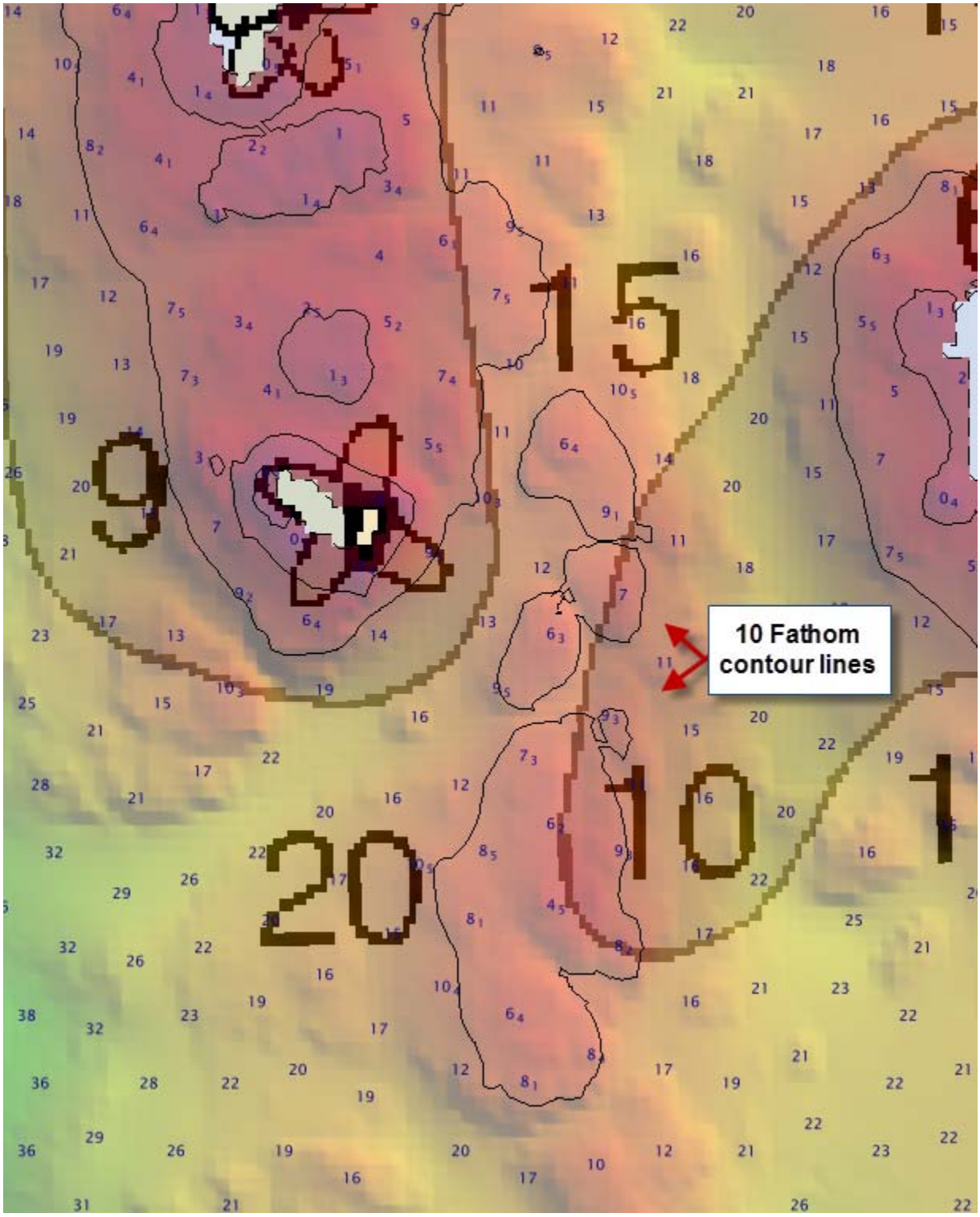


Figure 23: Disagreement between charted contours (17376) and surveyed contours southeast of Step Island.

Raster Comparison

Number:	17320		
Scale:	217828		
Edition:	18		
Edition Date:	03 / 2008		
Notices:	LNM	52	12 / 29 / 2010

Recommendation: Soundings from survey H12063 generally agreed within one to two fathoms with charted depths on chart 17320. A notable exception to this general agreement is listed and shown in Thetis Bay (Figure 24). A 23-fathom charted depth was surveyed by MBES at 17-fathoms.[24] Contours generated in CARIS HIPS closely approximated the charted 3 and 10 fathom contours. Throughout the survey there are numerous rocky shoals that are not depicted accurately by the charted contours.[25]

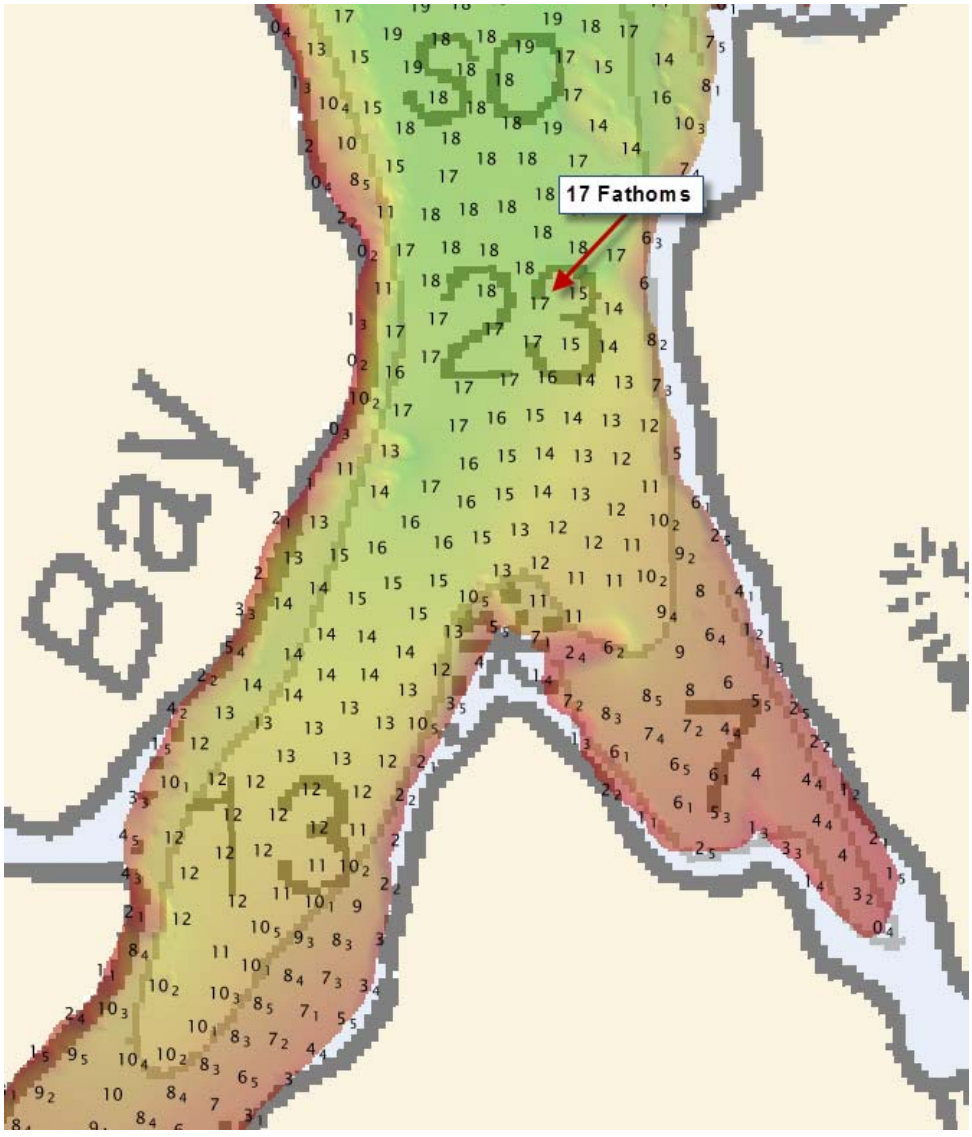


Figure 24: Disagreement between charted depth (17320) and surveyed soundings mid Thetis Bay.

Recommendation:

Disproved Soundings

There are no disproved soundings for this survey.[26]

AWOIS Items

Number of AWOIS Items Addressed:	1
Number of AWOIS Items Not Addressed:	0

There was one AWOIS item located within the limits of H12063. The AWOIS item, reported as a submerged rock, was disproved by MBES and is included in the H12063 Final Feature File and the H12063 Report in Appendix II.[27]

Charted Features (Non-AWOIS)

Number of Non-AWOIS Charted Features:	3

Examples of major discrepancies disproved by MBES are the foul ground areas, west of Lisa Pt, as well as the foul ground area between islets, southeast of green day marker "3" (Figure 25).[28]

The 15-fathom sounding reported N of Helianthus passage was surveyed by MBES at 57 fathoms (Figure 26).[29]

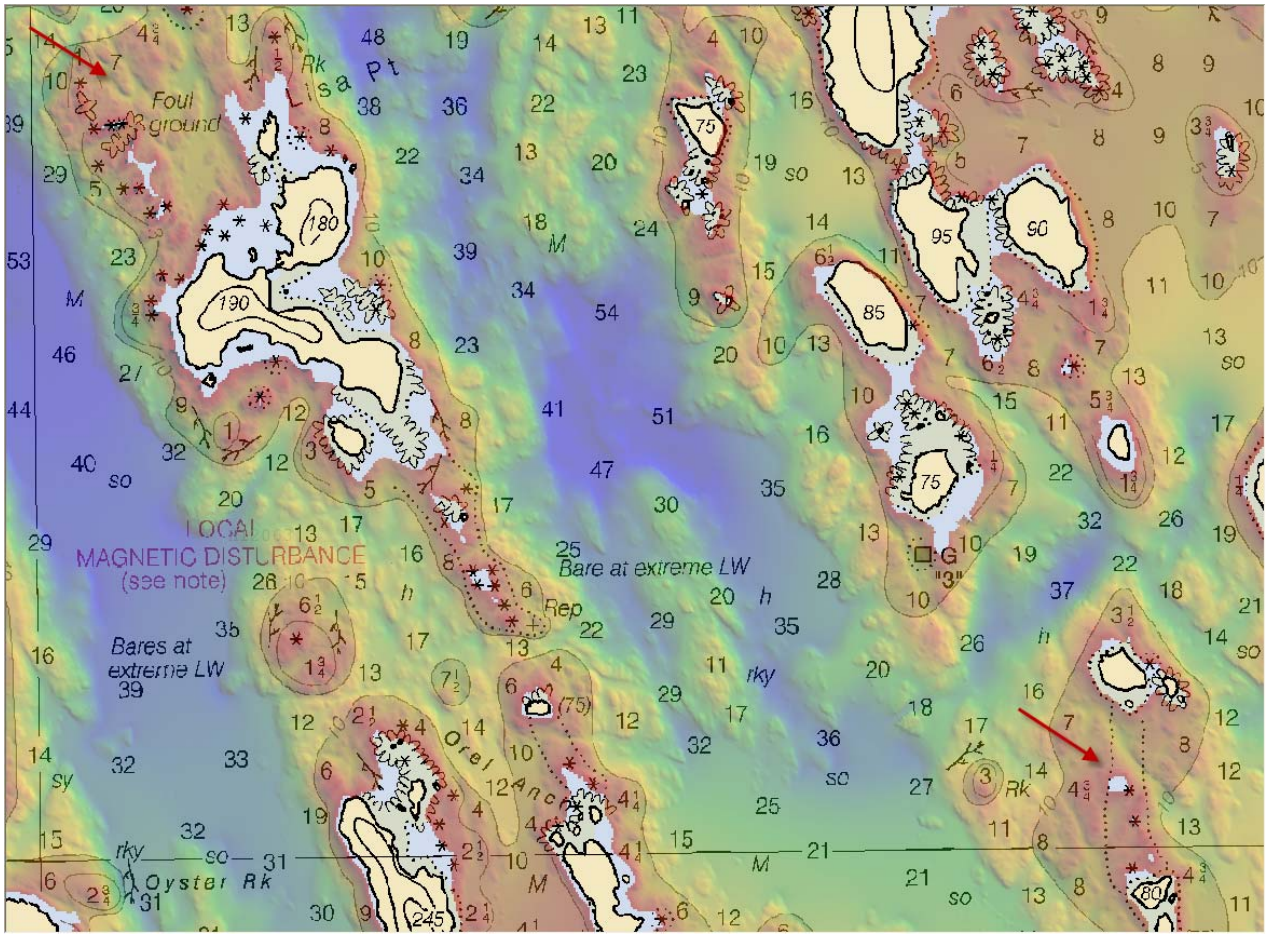


Figure 25: Disproved, by MBES foul ground areas to west of Lisa Pt and between islets, southeast of green day marker "3".

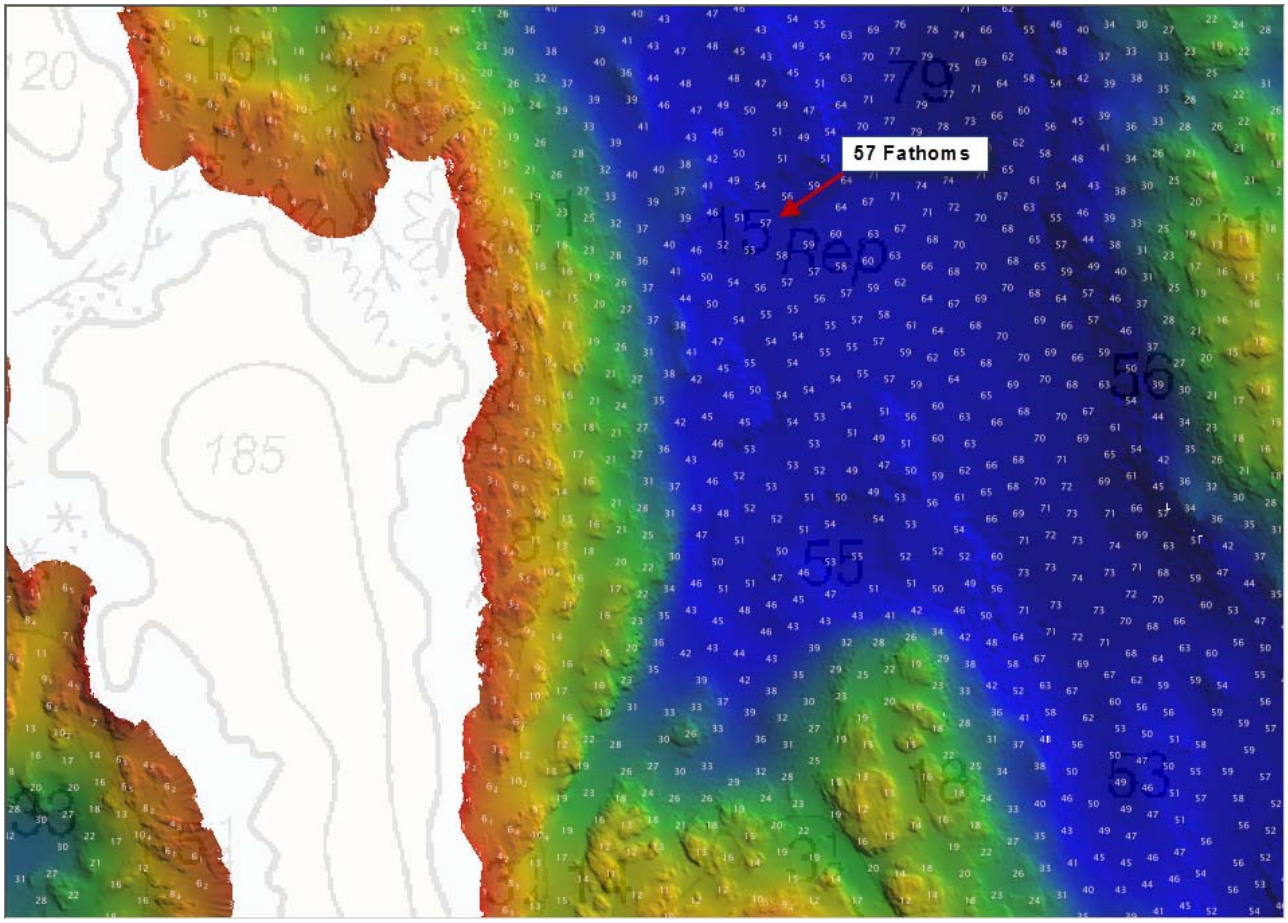


Figure 26: Reported 15-fathom sounding disproved by MBES N of Helianthus passage.

Uncharted Features

No uncharted features addressed.

Dangers to Navigation (DTON)

A report was submitted.

Report Date	Report Name
2010-11-09	H12063_DTON_Report

Thirteen dangers to navigation were found within the limits of H12063 and were reported to the Marine Chart Division on November 9, 2010.[30] A copy of the preliminary Danger to Navigation Report is included in Appendix I.[31]

Charted Shoals and Hazardous Features

No charted shoals or hazardous features addressed.

Channels

No channels addressed.[32]

D2. Additional Results

Shoreline Investigation Results

Fairweather personnel conducted limited shoreline verification and reconnaissance at times near predicted negative or low tides within the survey limits. Annotations, information, and diagrams collected on DP forms and boat sheets during field operations are scanned with included in the digital Separates I folder. Shoreline verification procedures for survey H12063 conform to those detailed in the DAPR, with the exceptions as discussed below.

Features from the current editions of charts 17320 and 17376 that were not depicted by the source shoreline data were digitized in CARIS Notebook with S-57 attribution into the H12063_Final_Feature_File.hob file, to be displayed for field verification.

Feature processing procedures were followed as outlined in the DAPR. Within the survey area several charted ledges, mean lower low water lines, mean high water lines, reefs and foul grounds are in conflict with the contemporary hydrographic data. In accordance with agreements reached with the Hydrographic Branches, these features were not further processed by field personnel.[33] Descriptions on NOAA extended attributions for features can be found in Appendix V, in the pdf document, Draft FPM Section 4-4-9-Jan14.

The Hydrographer recommends that the shoreline depicted in the CARIS Notebook files and final sounding files supersede and complement shoreline information compiled on the CSF and charts.[34]

Aids to Navigation (ATONs)

USCG ATONs in survey area: All USCG aids serve their intended purpose.

Survey H12063 includes two (2) aids to navigation (ATON), which were assigned for positioning by the Project Instructions. An ATON Report was submitted to aton.report@noaa.gov for all assigned and positioned ATONs within the survey area of OPR-0322-FA-10. See the OPR-0322-FA-10 Horizontal and Vertical Control Report regarding further information on positioned ATONs.

Private ATONs in survey area: No Private aids in the survey area.

Overhead Features (bridges, overhead cables, overhead pipelines)

No overhead features addressed.[35]

Submarine Features

No submarine features addressed.[36]

Ferry Routes

No ferry routes addressed.[37]

Drilling Structures, Production Platforms, and Well Heads

No drilling structures, production platforms, or well heads addressed.[38]

Unusual or Scientifically Significant Features

On western side of Petrof Bay crescent shaped features were observed in MBES data; these features are approximately 50cm proud of the bottom (Figure 27).[39]

Figure 27: Half-meter high meter crescent shaped features observed in western side of Petrof Bay MBES.

Construction or Dredging

No constructions or dredging addressed.[40]

New Surveys

No new surveys suggested.

Insets

No insets suggested.

E. Approval Sheet

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Survey's Division Field Procedures Manual, and NOS Hydrographic Surveys Specifications and Deliverables. Field Operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. This survey is complete and no additional work is required.

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 Pacific Hydrographic Branch.

Survey H12063 is adequate to supersede charted soundings in their common areas.

The Data Acquisition and Processing Report for OPR-O322-FA-10 is submitted separately and contains additional information relevant to the survey.

Approved and Forwarded By:

Approver Name	Approver Title	Approval Date	Digital Signature
CAPT David O. Neander, NOAA	Chief of Party	02 / 25 / 2011	2011.02.28 09:58:23 -08'00'
HAST Christine L. Mallory, NOAA	Sheet Manager	02 / 25 / 2011	Christine Mallory 2011.02.25 22:22:37 Z
CST Lynnette V. Morgan	Chief Survey Technician	02 / 25 / 2011	Digitally signed by Lynnette V. Morgan Date: 2011.02.28 16:53:25 Z
LT Briana J. Welton, NOAA	Field Operations Officer	02 / 25 / 2011	Digitally signed by Briana Welton Date: 2011.02.28 01:08:43 Z

Additional Reports:

Report Name	Date Sent	Recipient
Hydrographic Systems Readiness Review	2010-04-09	N/CS34
Data Acquisition and Processing Report	2011-02-11	N/CS34
Horizontal and Vertical Control Report	2011-02-11	N/CS34
Tides and Water Levels Package	NA	NA
Coast Pilot Report	TBD	N/CS26

Revisions and Corrections Compiled During Office Processing and Certification

[1] Concur with clarification. Some charted soundings and features within the limits of the survey have been selected to be retained. Chart depths and features as depicted in the HCell.
[2] Do not concur. There were data quality issues with the tilted Reson 8125 sonar, therefore, some of the data included in the field's coverage assessment was rejected during the Survey Acceptance Review because it did not meet specifications. After the data was rejected during the SAR, there were holidays in the survey coverage. With the exception of holidays that were deemed navigationally insignificant by the compiler, the HCell reflects the coverage of remaining data that meets specification.
[3] Concur with clarification. The percentage of crossline miles is greater than 5% after the tilted Reson 8125 data was rejected. See endnote 2.
[4] Concur with clarification. Greater differences are to be expected in areas of dynamic topography. The crossline comparison showed good agreement otherwise.
[5] Concur with clarification. The data is adequate for charting.
[6] Concur with clarification. The data is adequate for charting.
[7] Concur with clarification. A good portion of the tilted 8125 data did not meet specifications. During the Survey Acceptance Review, 56 lines of tilted 8125 data were rejected. The remaining data meets specifications.
[8] Concur with clarification. The data is adequate for charting.
[9] Concur with clarification. The data is adequate for charting.
[10] Concur with clarification. During the Survey Acceptance Review, the lines in Explorer Basin were filtered to reject data beyond 5 degrees to both port and starboard to bring the data within the specified SV error budget. The remaining data meets specifications, however, holidays were left as a result of the filtering. These holidays were deemed navigationally insignificant given the gently sloping nature of the immediate area and therefore were not preserved in the HCell coverage.
[11] Concur with clarification. The data is adequate for charting.
[12] Do not concur. See endnote 2.
[13] Concur with clarification. All navigationally significant features were identified during the survey, however, some may no longer have an associated least depth if the data was rejected during the SAR. See endnote 2. All features should be represented as depicted in the HCell.
[14] The rock, located at 56-25-58.54N, 134-03-57.93W, was reported as a DTON and has been applied to the chart. It is included in the HCell as a rock awash with unknown depth, and is located inside a newly defined foul area.
[15] Concur with clarification. Due to the fact the holidays are on a slope and there was shoaler data acquired upslope of the holidays, the holidays are navigationally insignificant at chart scale.
[16] Concur with clarification. Due to the fact the holidays are on a slope and there was shoaler data acquired upslope of the holidays, the holidays are navigationally insignificant at chart scale.
[17] Concur with clarification. Not all of the data met specifications upon submission to Pacific Hydrographic Branch. After substantial cleaning during the Survey Acceptance Review, the remaining data meets specifications and are adequate for charting.
[18] All of the surfaces were re-created during the SAR after the significant cleaning of the tilted 8125 data. The HCell was compiled using an 8m combined surface that was created during the SAR.
[19] After the surfaces were re-created during the SAR, there are now 86 designated soundings represented in the combined surface. The surface adequately represents the shoal depths in the survey area.
[20] The data is adequate for charting despite the need to fix two TrueHeave files.
[21] The data is adequate for charting despite not having TrueHeave applied.
[22] See attached Tide Note dated December 02, 2010
[23] Concur with clarification. Chart depths as depicted in the HCell and update contours based on the new survey data.
[24] Concur with clarification. Chart depths as depicted in the HCell.
[25] Concur with clarification. Update contours based on the new survey data.
[26] Do not concur. There is a 15 fathom reported sounding at 56-27-31.60N, 134-11-10.932W that was disproved by MBES and has been blue noted to be removed. The depths over the area are greater than 50

fathoms. Chart depths as depicted in the HCell.
[27] The reported submerged rock has been blue noted to be removed in the HCell. See attached AWOIS Report.
[28] Both the foul ground area west of Lisa Pt and the foul area between the islets southeast of green daymarker "3" have been blue noted to be removed. Chart features and depths as depicted in the HCell.
[29] The 15 fathom reported sounding has been blue noted to be removed. Chart depths as depicted in the HCell.
[30] All 13 DTONs have been applied to the chart and 12 are included in the HCell as reported. The 3 fathom submerged rock located at 56-24-58.7N, 134-04-33.4W was replaced in the HCell with a shoaler 2 fathom, 2 feet submerged rock located at 56-24-57.5N, 134-04-30.2W.
[31] See attached DTON Report.
[32] Concur with clarification. There are no channels within the survey area.
[33] The line and area features in conflict with the bathymetry are addressed in the HCell.
[34] Concur with clarification. Some shoreline features were revised or omitted in the HCell to accommodate chart scale. Chart features as depicted in the HCell.
[35] Concur with clarification. No overhead features exist within the survey area.
[36] Concur with clarification. No submarine features exist within the survey area.
[37] Concur with clarification. No ferry routes exist within the survey area.
[38] Concur with clarification. No drilling structures, production platforms, or well heads exist within the survey area.
[39] These features are not navigationally significant. Chart depths as depicted in the HCell.
[40] Concur with clarification. No constructions or dredging were being conducted within the survey area.

H12063 Danger to Navigation Report

Registry Number: H12063
State: Alaska
Locality: Chatham Strait
Sub-locality: Southern Tebenkof Bay
Project Number: OPR-0322-FA-10
Survey Dates: October 5, 2010 - November 8, 2010

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
17376	8th	08/01/2008	1:40,000 (17376_1)	NGA NTM: None (01/09/2010) USCG LNM: None (12/29/2009) CHS NTM: None (09/25/2009)
17360	35th	06/01/2008	1:217,828 (17360_1)	[L]NTM: ?
17320	18th	03/01/2008	1:217,828 (17320_1)	[L]NTM: ?
16016	21st	10/01/2007	1:969,756 (16016_1)	[L]NTM: ?
531	24th	07/01/2007	1:2,100,000 (531_1)	[L]NTM: ?
500	8th	06/01/2003	1:3,500,000 (500_1)	[L]NTM: ?
530	32nd	06/01/2007	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

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

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Rock	4.34 m	56° 26' 50.4" N	134° 07' 14.4" W	---
1.2	Rock	7.10 m	56° 26' 57.4" N	134° 14' 00.5" W	---
1.3	Rock	6.12 m	56° 26' 37.6" N	134° 05' 01.5" W	---
1.4	Rock	2.51 m	56° 24' 02.7" N	134° 04' 35.6" W	---
1.5	Rock	5.82 m	56° 24' 58.7" N	134° 04' 33.4" W	---
1.6	Rock	5.56 m	56° 25' 27.5" N	134° 06' 29.2" W	---
1.7	Rock	-0.01 m	56° 25' 58.5" N	134° 03' 58.0" W	---
1.8	Rock	2.60 m	56° 25' 29.9" N	134° 03' 38.9" W	---

1.9	Rock	3.40 m	56° 24' 49.5" N	134° 03' 04.8" W	---
1.10	Rock	4.71 m	56° 26' 52.8" N	134° 08' 19.2" W	---
1.11	Rock	0.62 m	56° 27' 47.9" N	134° 13' 49.4" W	---
1.12	Rock	1.75 m	56° 25' 06.9" N	134° 12' 18.5" W	---
1.13	Rock	4.70 m	56° 27' 01.9" N	134° 09' 49.1" W	---

1 - Danger To Navigation

1.1) 201/469

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 26' 50.4" N, 134° 07' 14.4" W

Least Depth: 4.34 m (= 14.24 ft = 2.373 fm = 2 fm 2.24 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.302 m

Timestamp: 2010-279.18:49:36.082 (10/06/2010)

Survey Line: h12063 / fa_2806_400khz_rsn7125_512bms_2010 / 2010-279 / 2010m_2791849

Profile/Beam: 201/469

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2806_400khz_rsn7125_512bms_2010/2010-279/2010m_2791849	201/469	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2 ¼fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

2fm 2ft (531_1)

4.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 4.340 m

Feature Images

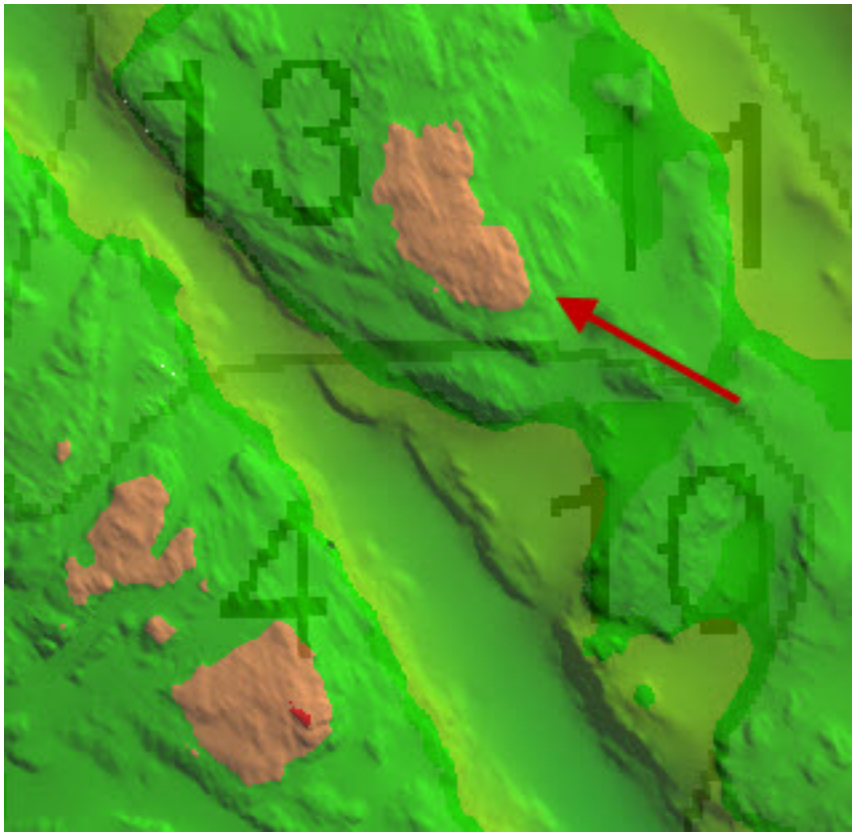


Figure 1.1.1

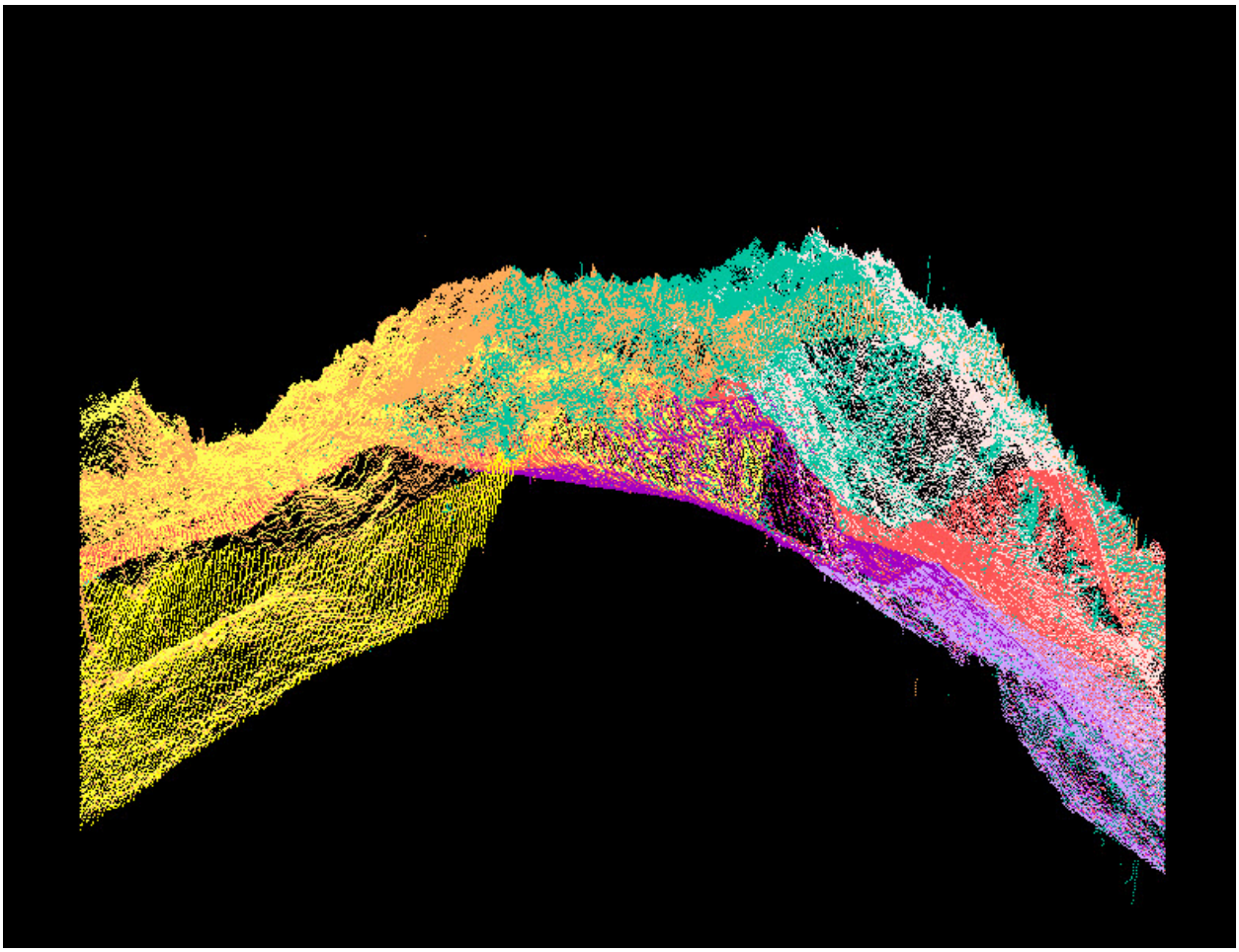


Figure 1.1.2

1.2) 473/88

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 26' 57.4" N, 134° 14' 00.5" W

Least Depth: 7.10 m (= 23.30 ft = 3.883 fm = 3 fm 5.30 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.302 m

Timestamp: 2010-283.19:54:06.809 (10/10/2010)

Survey Line: h12063 / fa_2806_400khz_rsn7125_512bms_2010 / 2010-283 / 2010m_2831953

Profile/Beam: 473/88

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2806_400khz_rsn7125_512bms_2010/2010-283/2010m_2831953	473/88	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3 ¾fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

3fm 5ft (531_1)

7.1m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 7.102 m

Feature Images

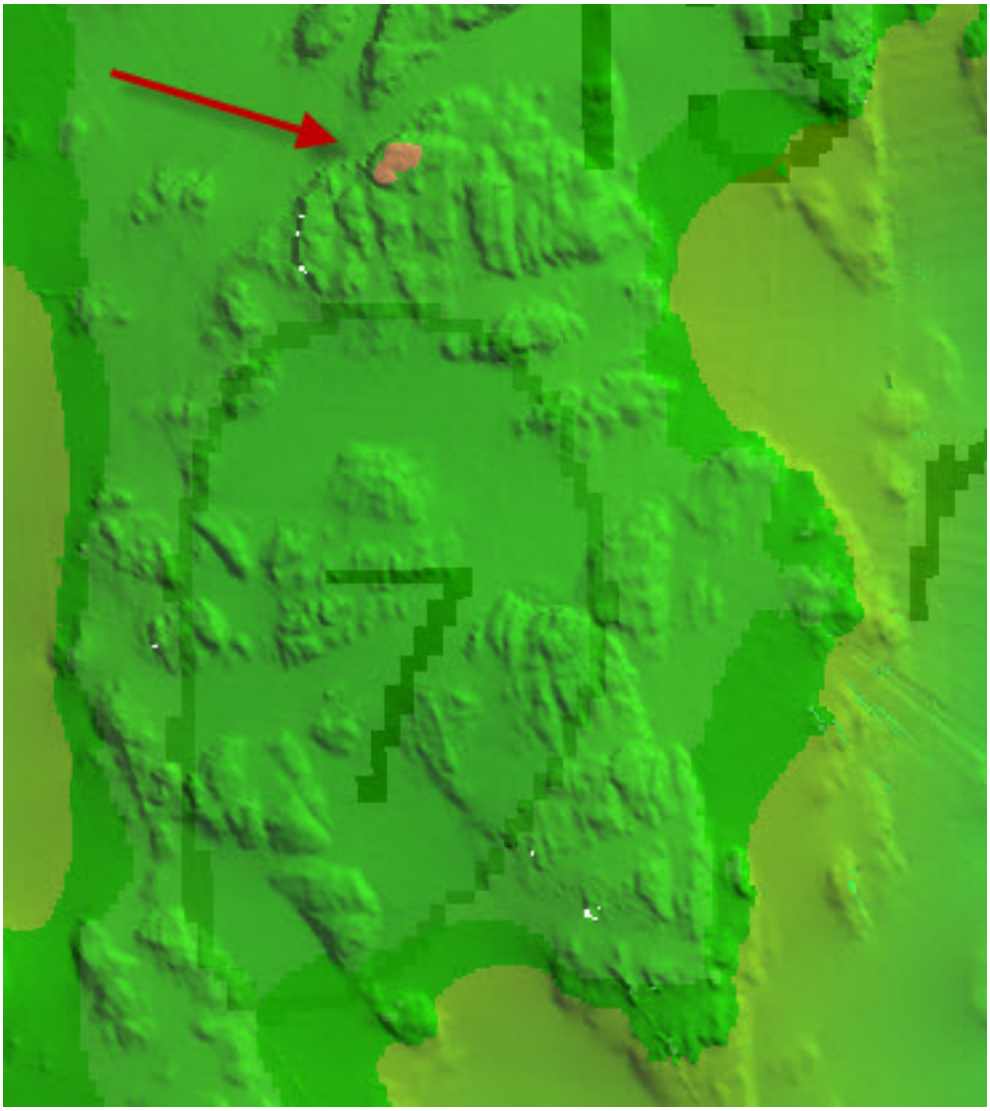


Figure 1.2.1

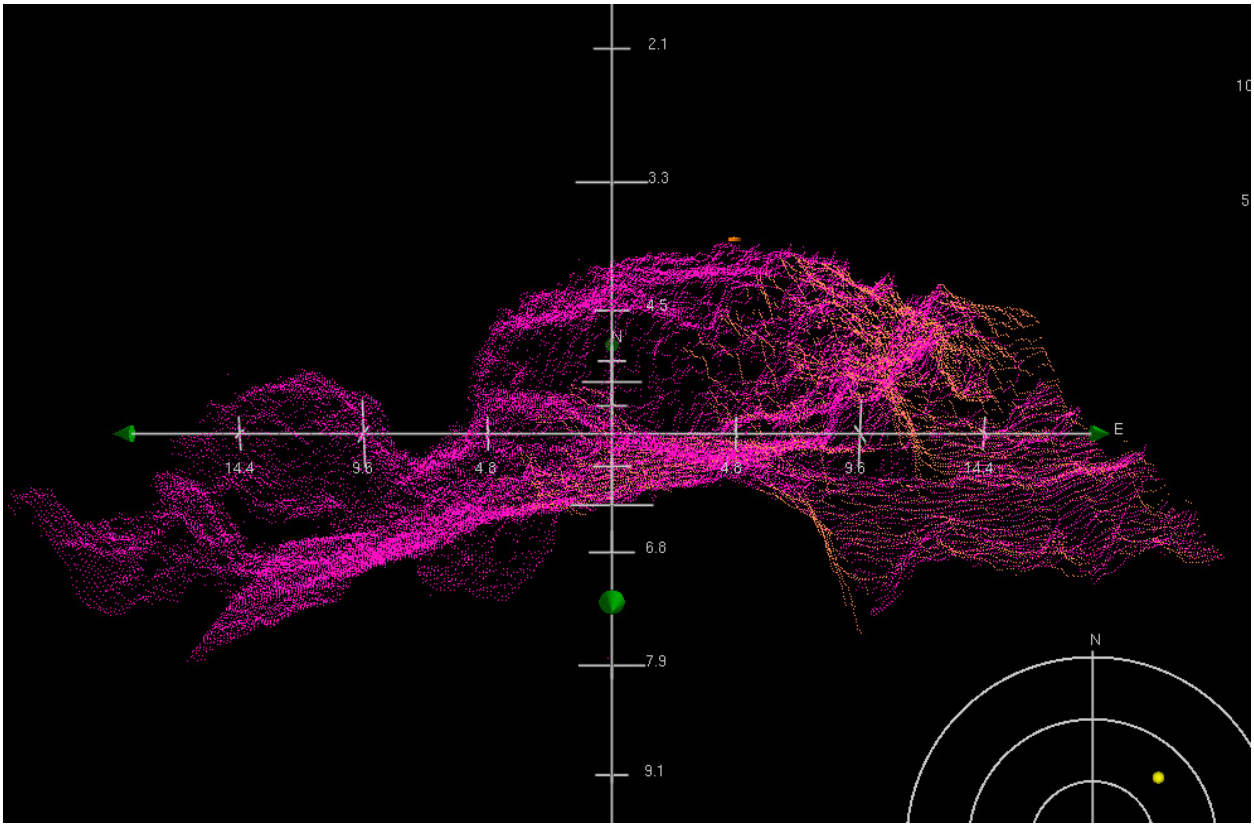


Figure 1.2.2

1.3) 199/207

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 26' 37.6" N, 134° 05' 01.5" W

Least Depth: 6.12 m (= 20.07 ft = 3.345 fm = 3 fm 2.07 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.301 m

Timestamp: 2010-287.18:27:55.773 (10/14/2010)

Survey Line: h12063 / fa_2806_400khz_rsn7125_512bms_2010 / 2010-287 / 2010m_2871827

Profile/Beam: 199/207

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2806_400khz_rsn7125_512bms_2010/2010-287/2010m_2871827	199/207	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

3fm 2ft (531_1)

6.1m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 6.118 m

Feature Images

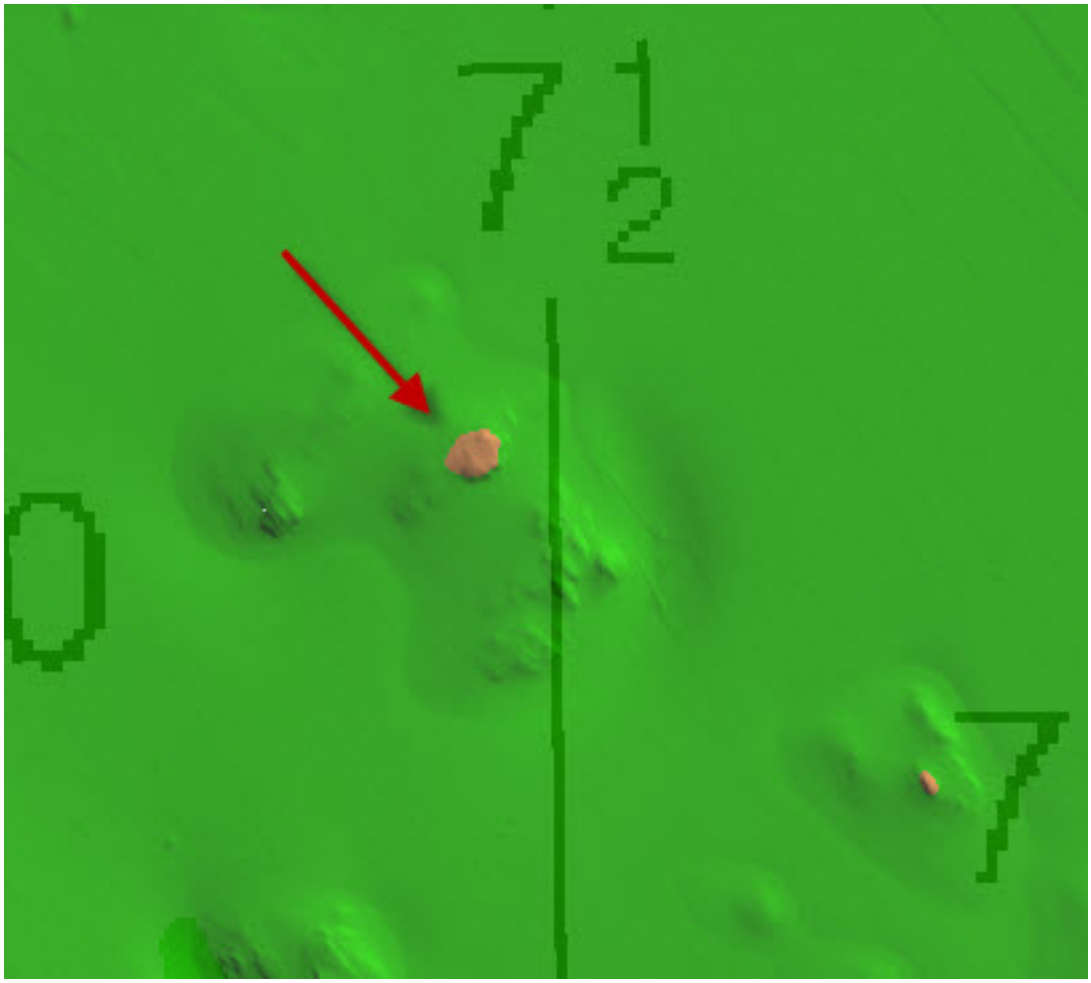


Figure 1.3.1

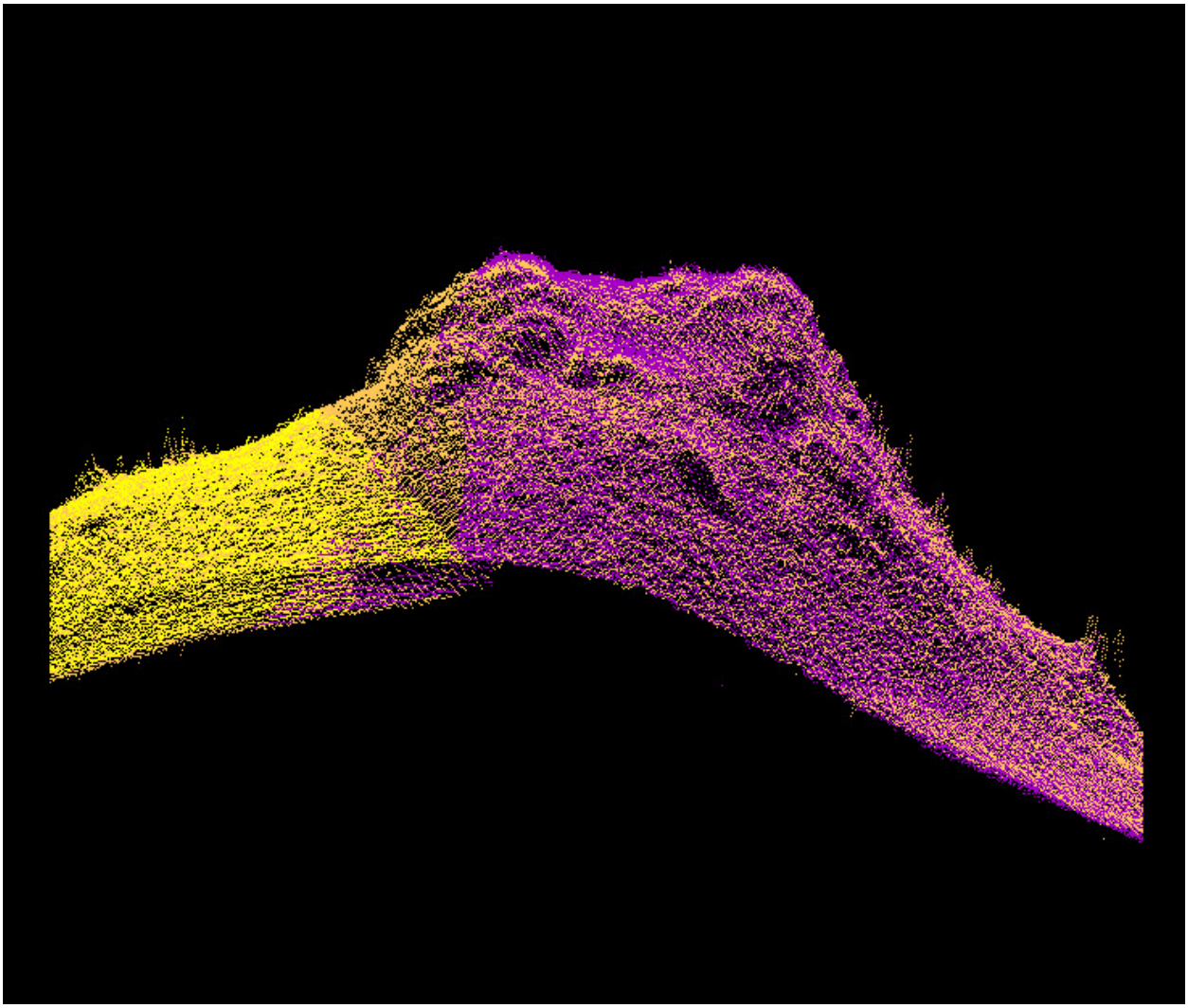


Figure 1.3.2

1.4) 1740/130

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 24' 02.7" N, 134° 04' 35.6" W

Least Depth: 2.51 m (= 8.24 ft = 1.373 fm = 1 fm 2.24 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.301 m

Timestamp: 2010-306.21:43:30.884 (11/02/2010)

Survey Line: h12063 / fa_2806_400khz_rsn7125_512bms_2010 / 2010-306 / 2010m_3062140

Profile/Beam: 1740/130

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2806_400khz_rsn7125_512bms_2010/2010-306/2010m_3062140	1740/130	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

1fm 2ft (531_1)

2.5m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 2.511 m

Feature Images

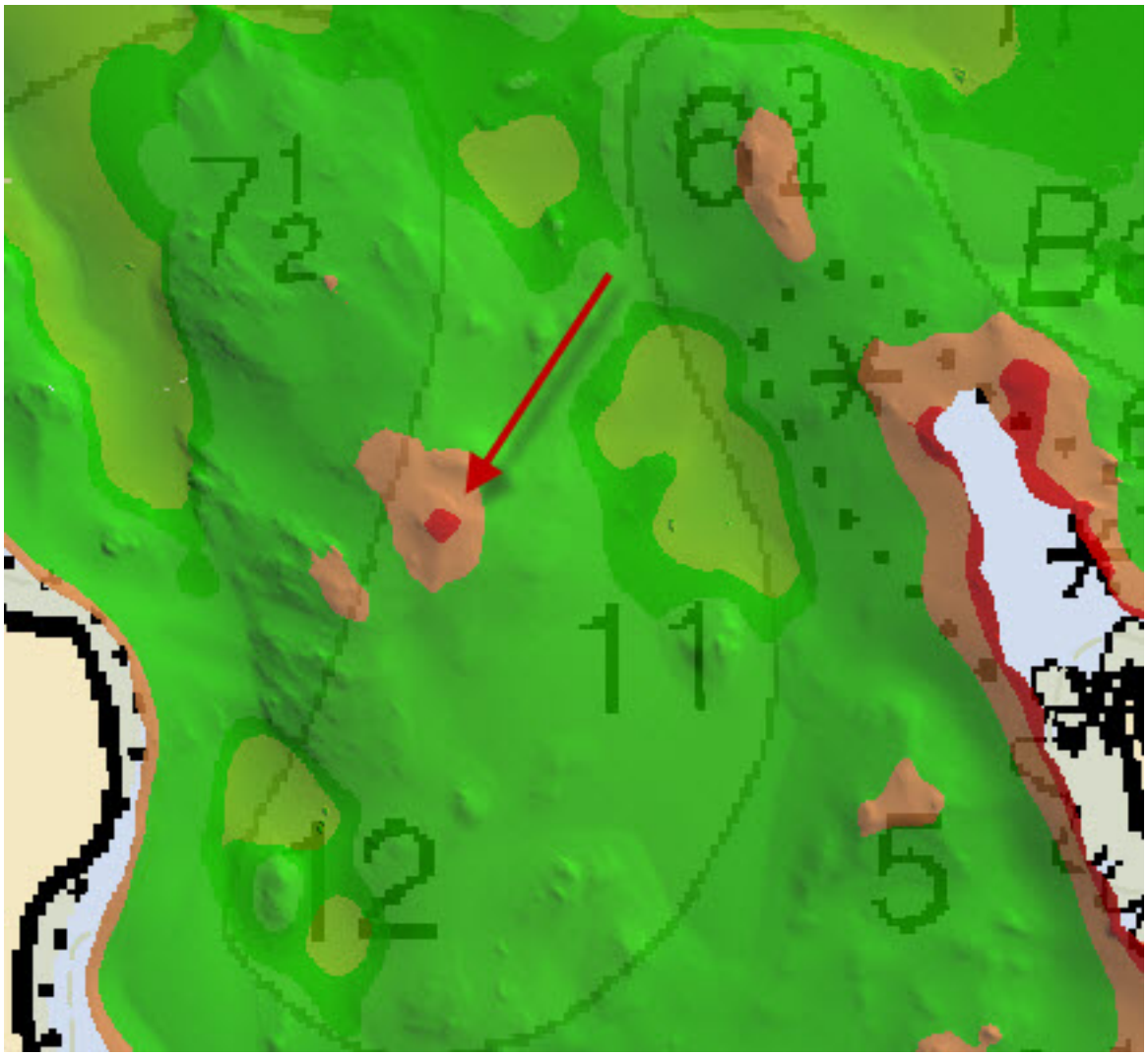


Figure 1.4.1

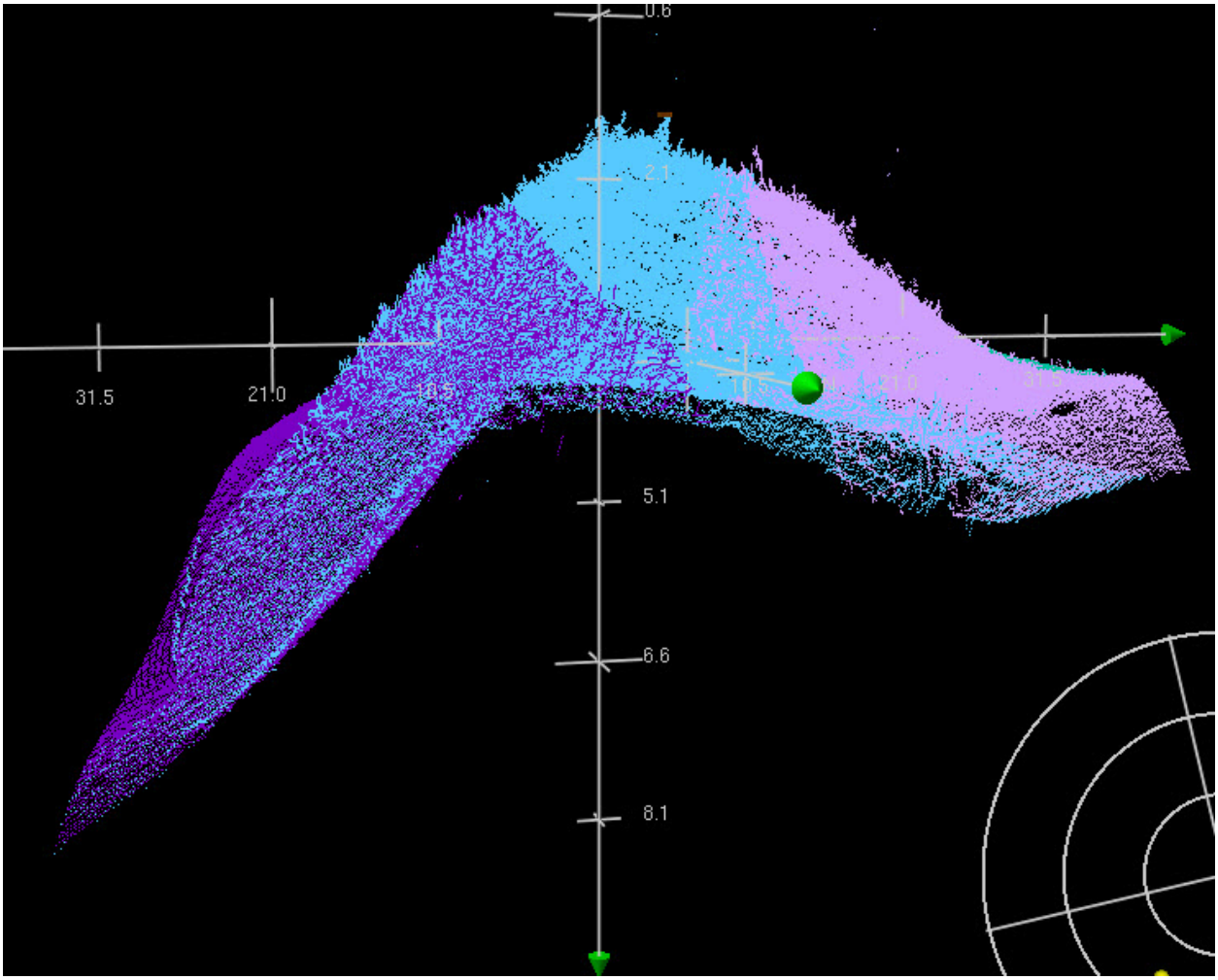


Figure 1.4.2

1.5) 1598/262

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 24' 58.7" N, 134° 04' 33.4" W

Least Depth: 5.82 m (= 19.08 ft = 3.181 fm = 3 fm 1.08 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.301 m

Timestamp: 2010-308.19:42:20.062 (11/04/2010)

Survey Line: h12063 / fa_2806_400khz_rsn7125_512bms_2010 / 2010-308 / 2010m_3081939

Profile/Beam: 1598/262

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2806_400khz_rsn7125_512bms_2010/2010-308/2010m_3081939	1598/262	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

3fm 1ft (531_1)

5.8m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 5.817 m

Feature Images

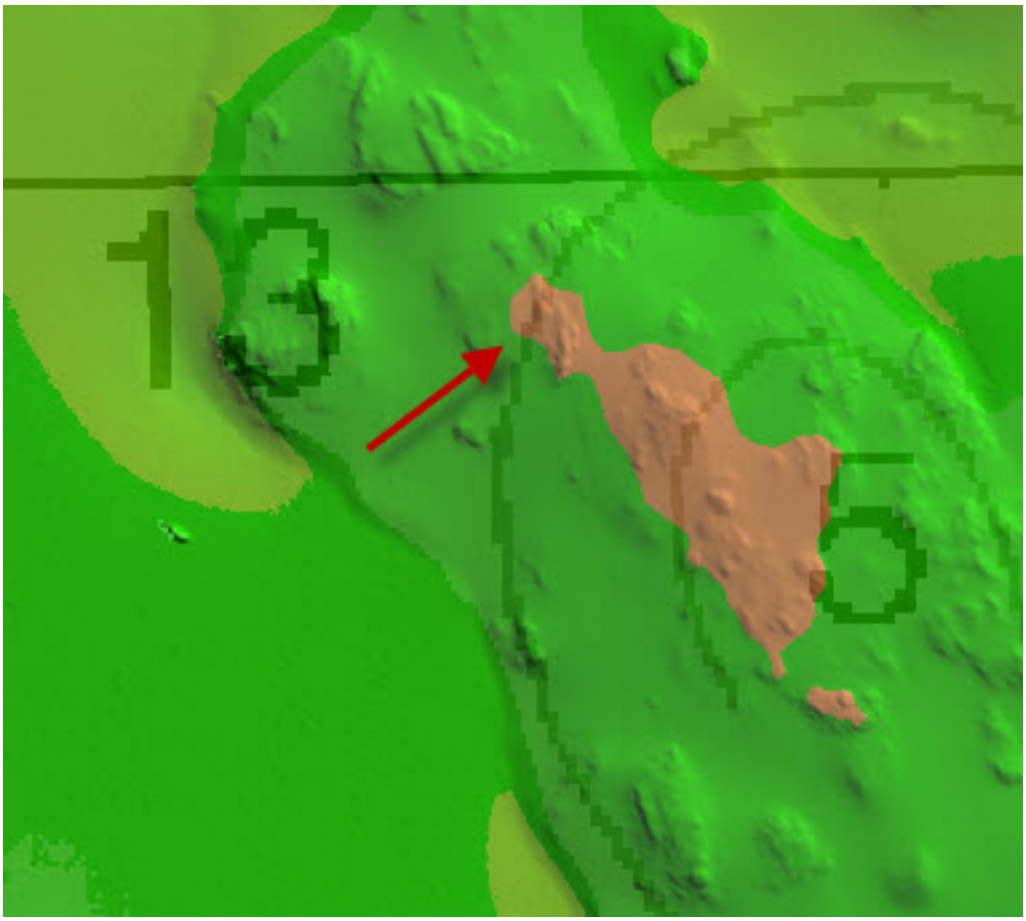


Figure 1.5.1

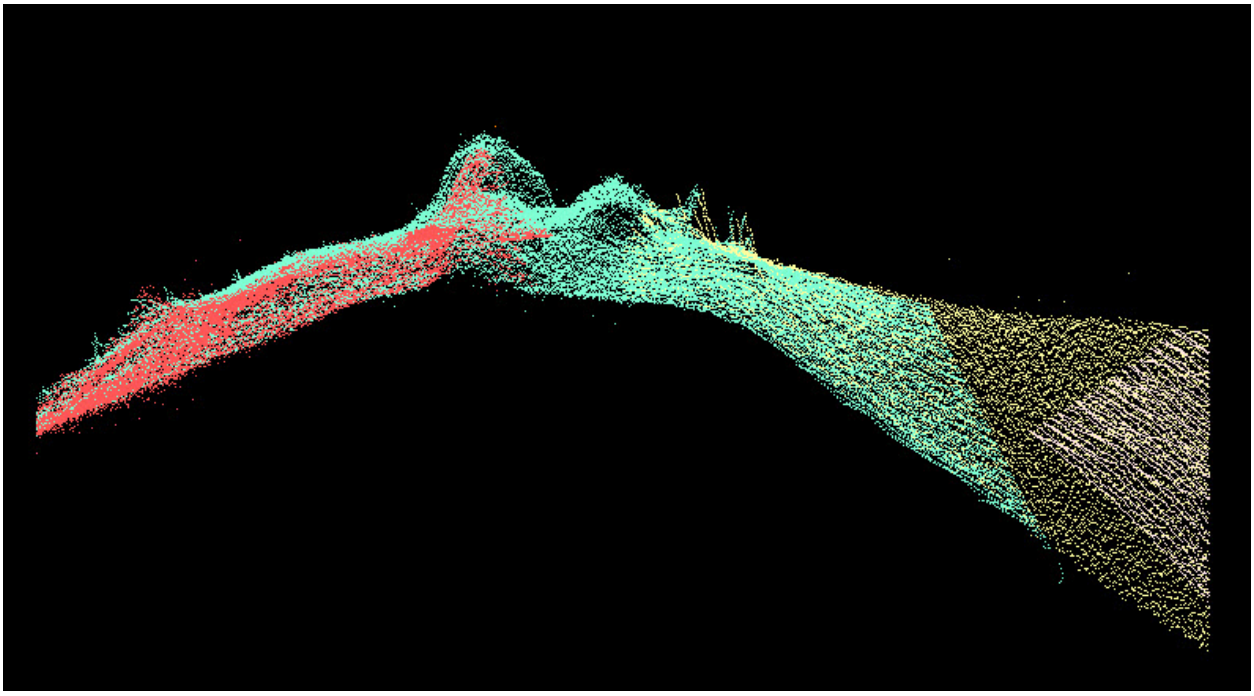


Figure 1.5.2

1.6) 940/98

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 25' 27.5" N, 134° 06' 29.2" W

Least Depth: 5.56 m (= 18.24 ft = 3.041 fm = 3 fm 0.24 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.983 m ; **TVU (TPEv)** ±0.317 m

Timestamp: 2010-279.23:09:54.851 (10/06/2010)

Survey Line: h12063 / fa_2807_200khz_rsn7125_256bms_2010 / 2010-279 / 2010m_2792308

Profile/Beam: 940/98

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2807_200khz_rsn7125_256bms_2010/2010-279/2010m_2792308	940/98	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

3fm 0ft (531_1)

5.6m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 5.561 m

Feature Images

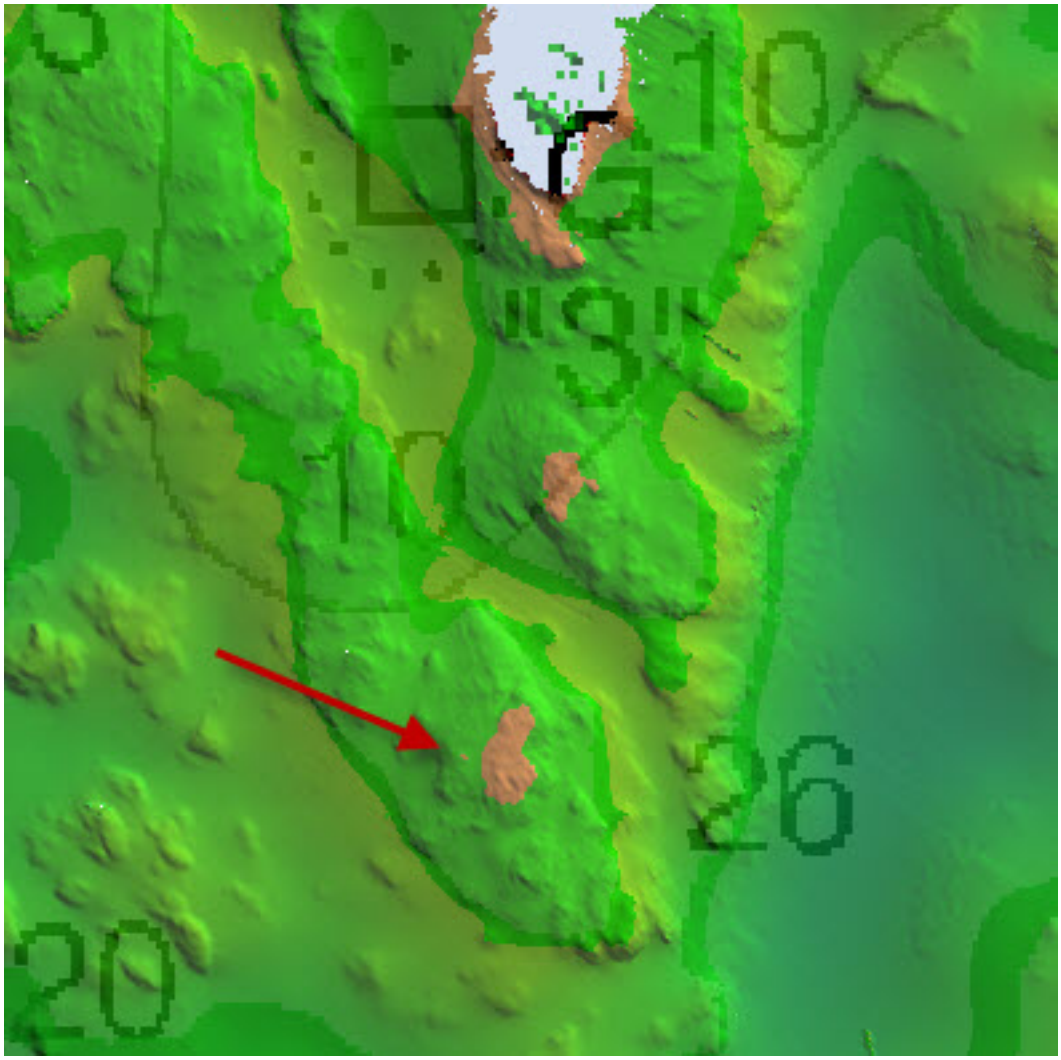


Figure 1.6.1

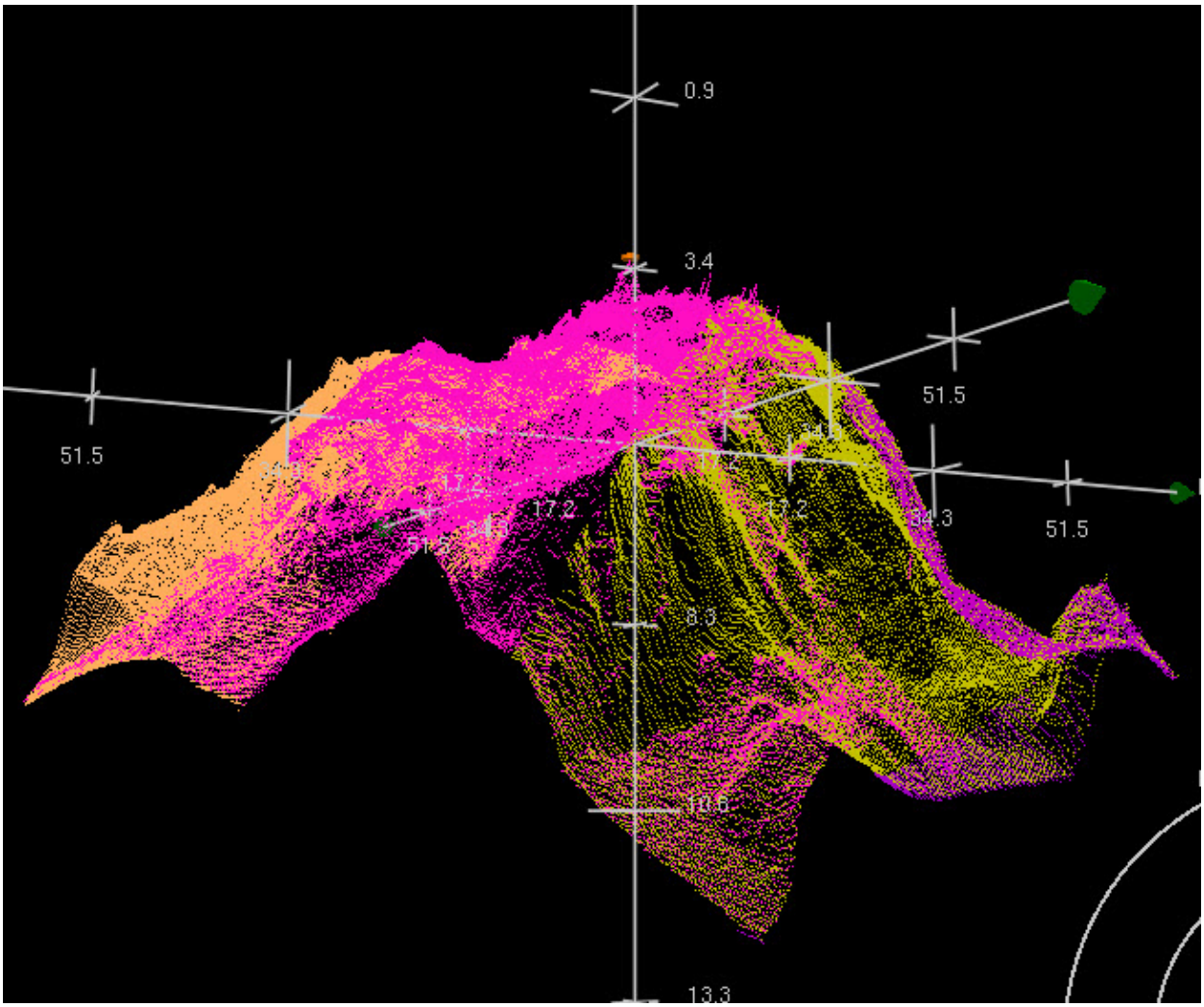


Figure 1.6.2

1.7) 241/1

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 25' 58.5" N, 134° 03' 58.0" W

Least Depth: -0.01 m (= -0.02 ft = -0.003 fm = 0 fm 5.98 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.316 m

Timestamp: 2010-312.20:41:55.398 (11/08/2010)

Survey Line: h12063 / fa_2807_400khz_rsn7125_512bms_2010 / 2010-312 / 2010m_3122041a

Profile/Beam: 241/1

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2807_400khz_rsn7125_512bms_2010/2010-312/2010m_3122041a	241/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

0fm 0ft (531_1)

.0m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - -0.006 m

Feature Images

Figure 1.7.1

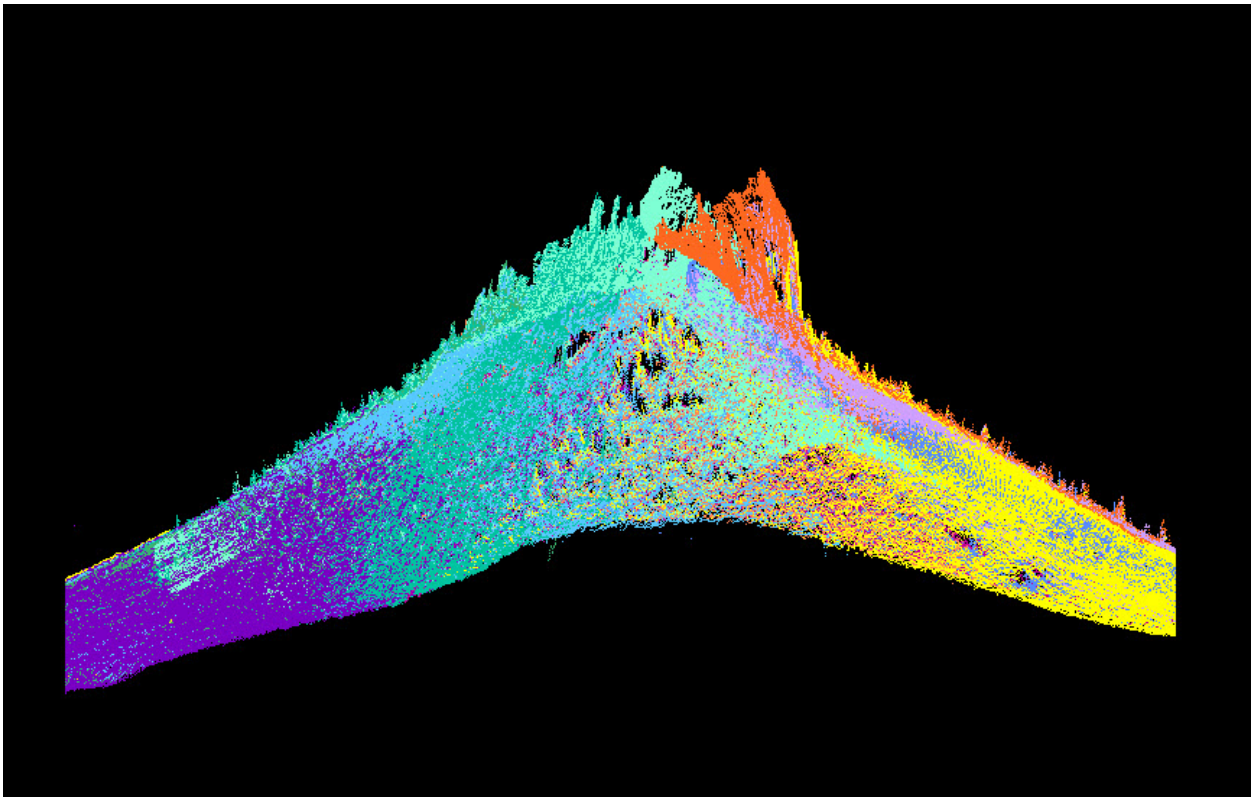


Figure 1.7.2

1.8) 3080/48

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 25' 29.9" N, 134° 03' 38.9" W

Least Depth: 2.60 m (= 8.52 ft = 1.420 fm = 1 fm 2.52 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.294 m

Timestamp: 2010-306.20:48:39.477 (11/02/2010)

Survey Line: h12063 / fa_2808_400khz_rsn7125_512bms_2010 / 2010-306 / 2010m_3062046

Profile/Beam: 3080/48

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_400khz_rsn7125_512bms_2010/2010-306/2010m_3062046	3080/48	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

1fm 2ft (531_1)

2.6m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 2.596 m

Feature Images

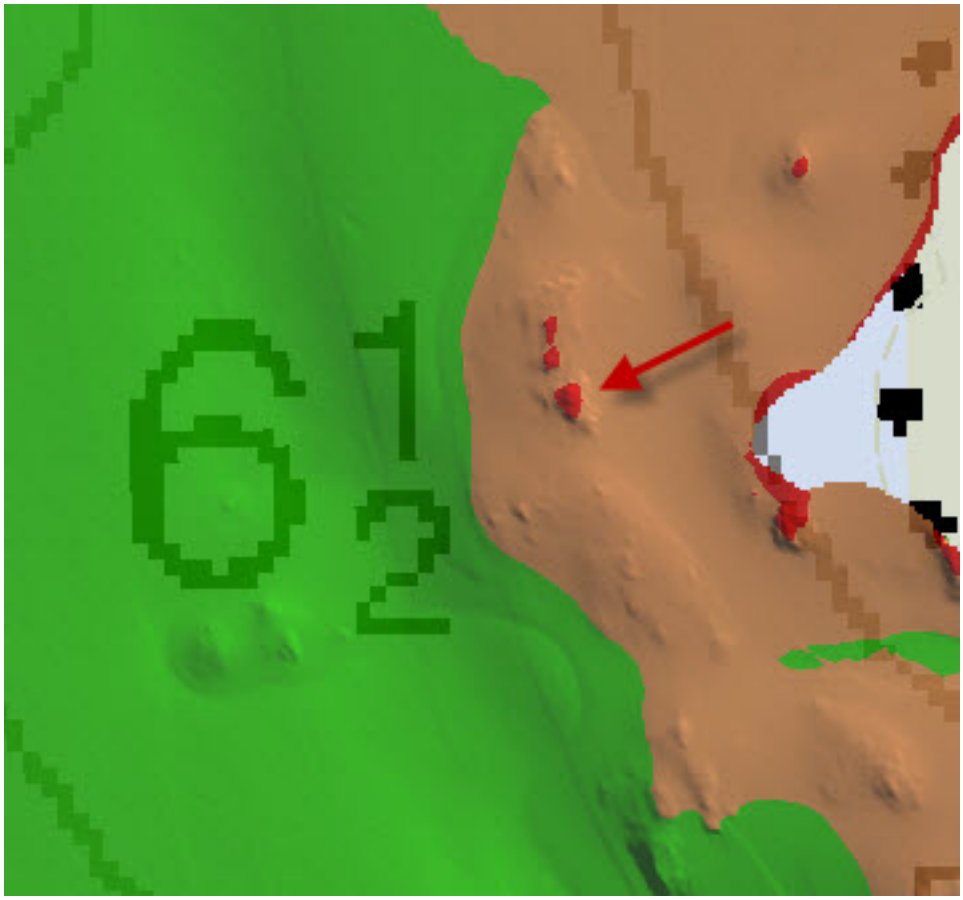


Figure 1.8.1

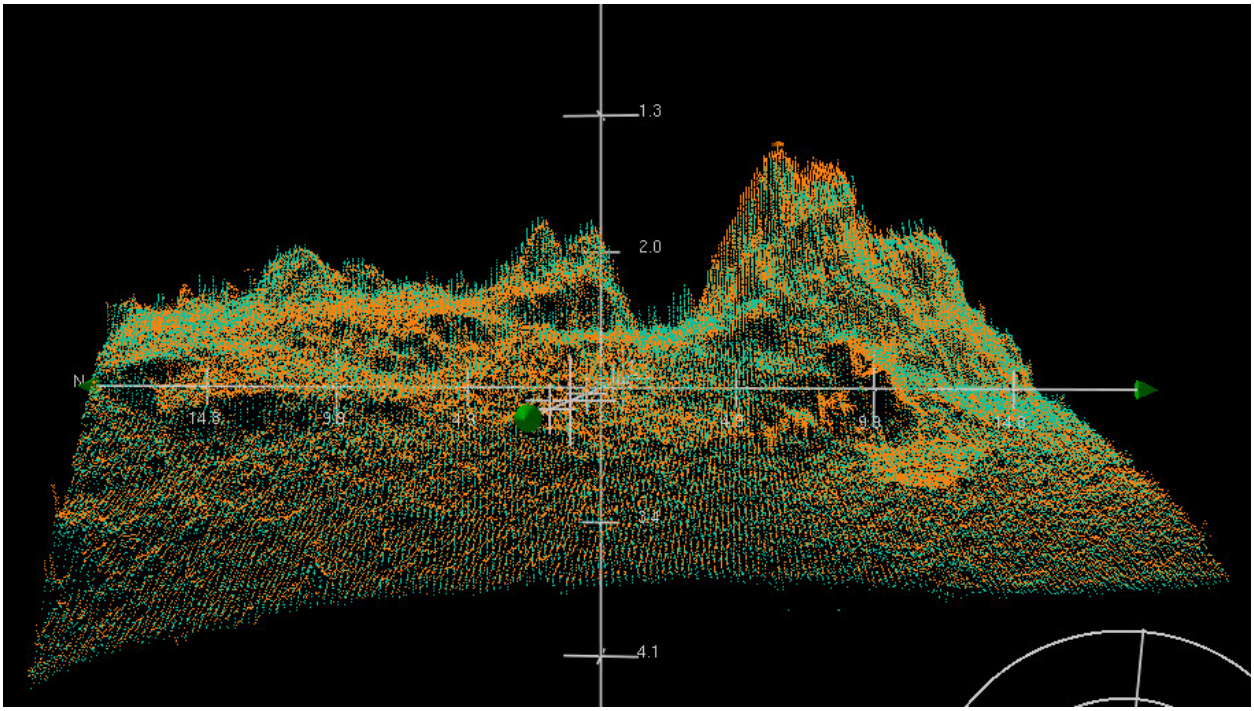


Figure 1.8.2

1.9) 133/18

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 24' 49.5" N, 134° 03' 04.8" W

Least Depth: 3.40 m (= 11.15 ft = 1.858 fm = 1 fm 5.15 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.294 m

Timestamp: 2010-306.22:29:49.464 (11/02/2010)

Survey Line: h12063 / fa_2808_400khz_rsn7125_512bms_2010 / 2010-306 / 2010m_3062229

Profile/Beam: 133/18

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_400khz_rsn7125_512bms_2010/2010-306/2010m_3062229	133/18	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

1fm 5ft (531_1)

3.4m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 3.397 m

Feature Images

Figure 1.9.1

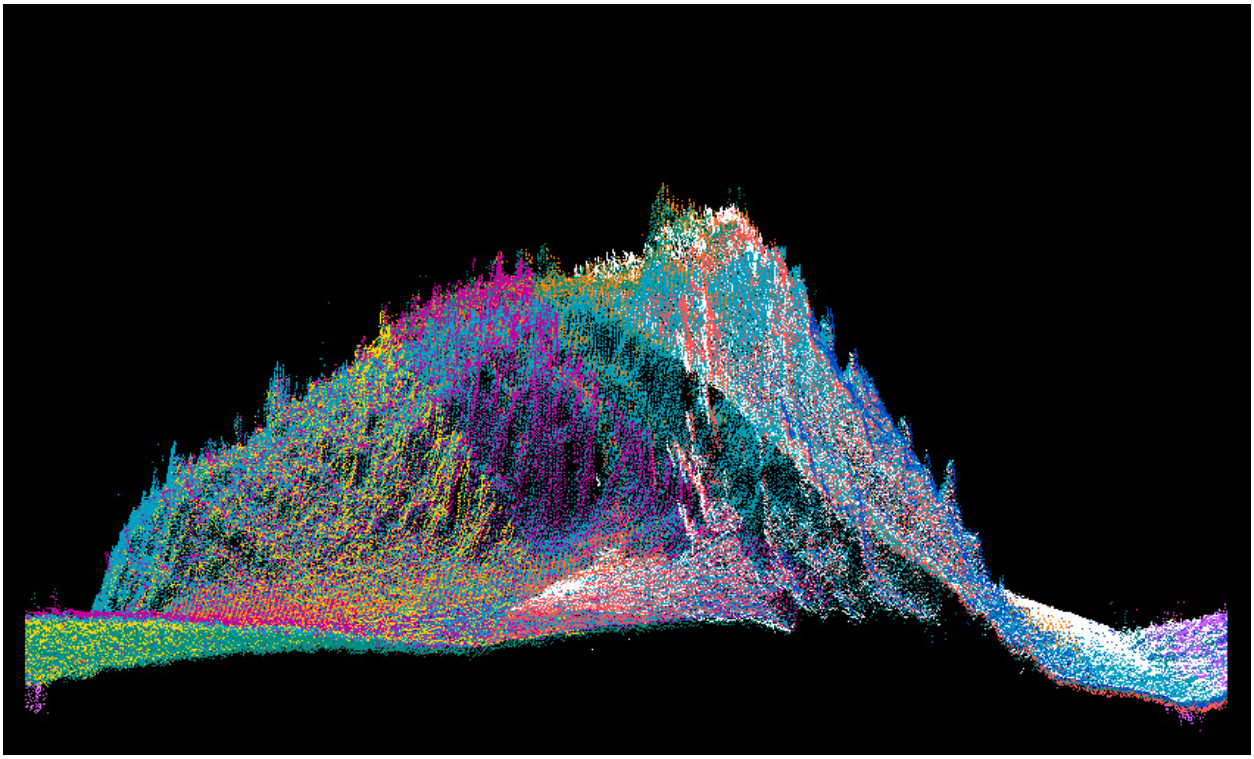


Figure 1.9.2

1.10) 360/228

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 26' 52.8" N, 134° 08' 19.2" W

Least Depth: 4.71 m (= 15.46 ft = 2.577 fm = 2 fm 3.46 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.985 m ; **TVU (TPEv)** ±0.309 m

Timestamp: 2010-279.19:29:31.397 (10/06/2010)

Survey Line: h12063 / fa_2808_rsn8125_tiltedhead_2010 / 2010-279 / 2010m_2791927

Profile/Beam: 360/228

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_rsn8125_tiltedhead_2010/2010-279/2010m_2791927	360/228	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2 ½fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

2fm 3ft (531_1)

4.7m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 4.712 m

Feature Images

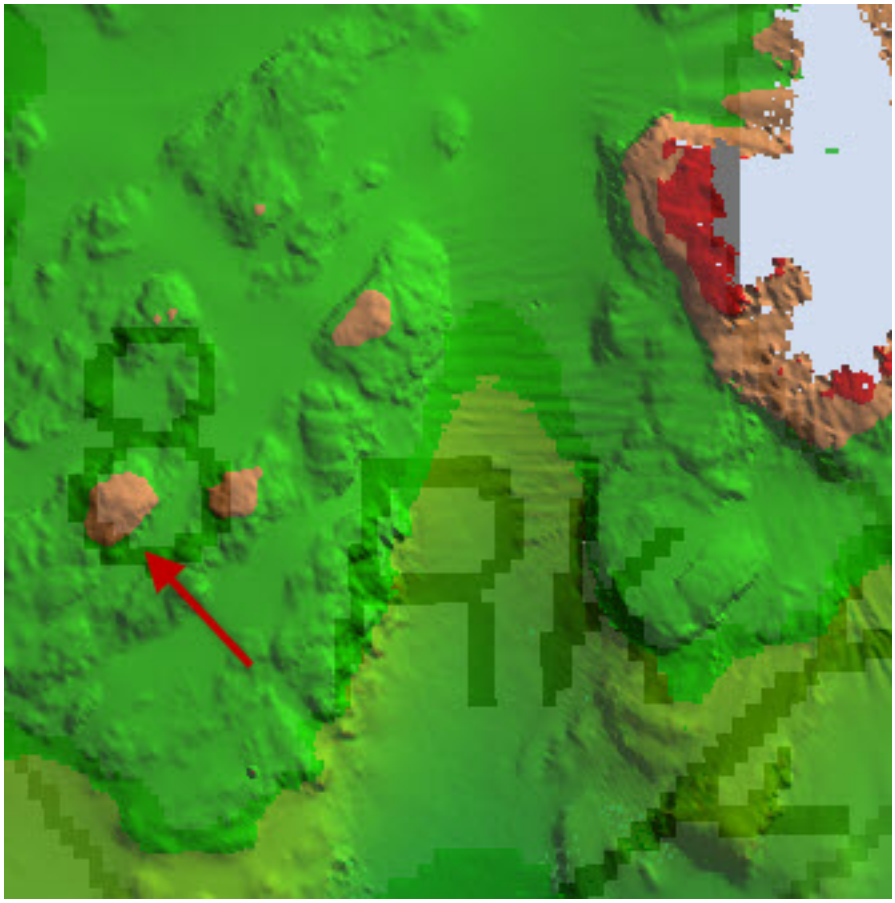


Figure 1.10.1

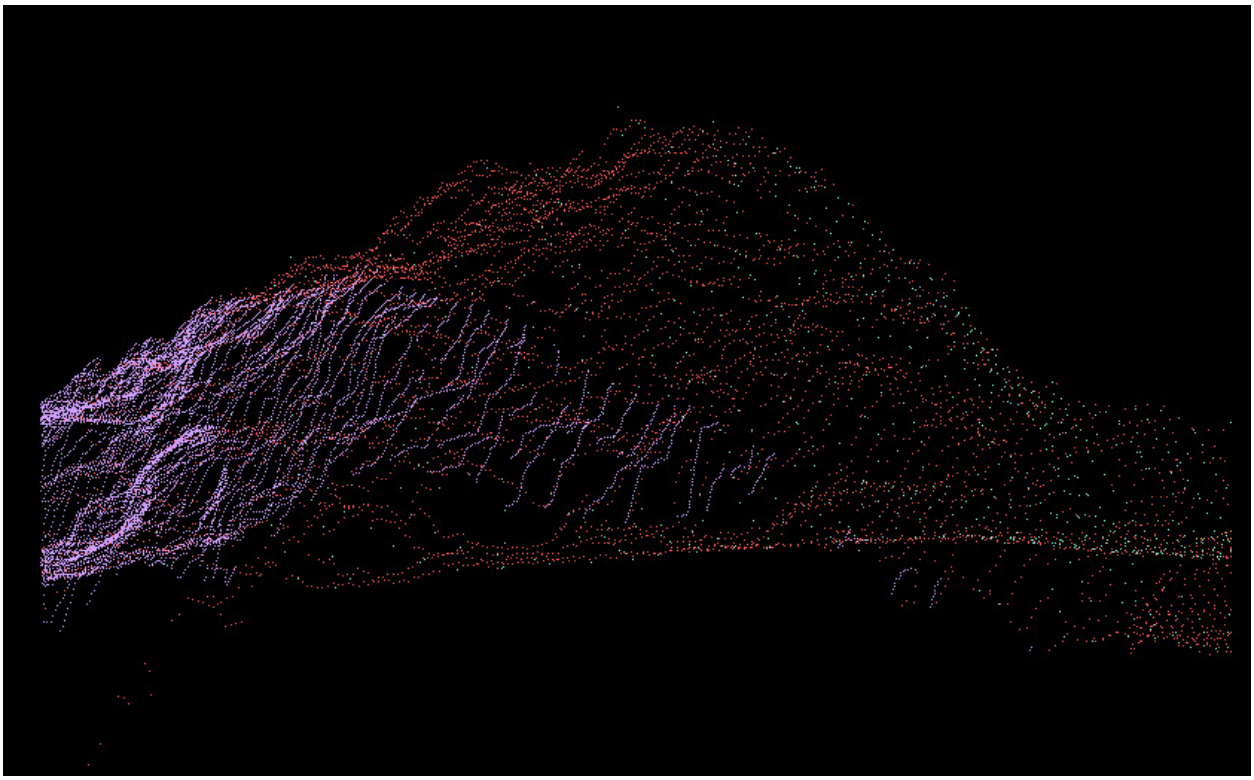


Figure 1.10.2

1.11) 41/216

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 27' 47.9" N, 134° 13' 49.4" W

Least Depth: 0.62 m (= 2.02 ft = 0.337 fm = 0 fm 2.02 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.295 m

Timestamp: 2010-281.22:09:57.836 (10/08/2010)

Survey Line: h12063 / fa_2808_rsn8125_tiltedhead_2010 / 2010-281 / 2010m_2812209

Profile/Beam: 41/216

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_rsn8125_tiltedhead_2010/2010-281/2010m_2812209	41/216	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

0fm 2ft (531_1)

.6m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 0.616 m

Feature Images

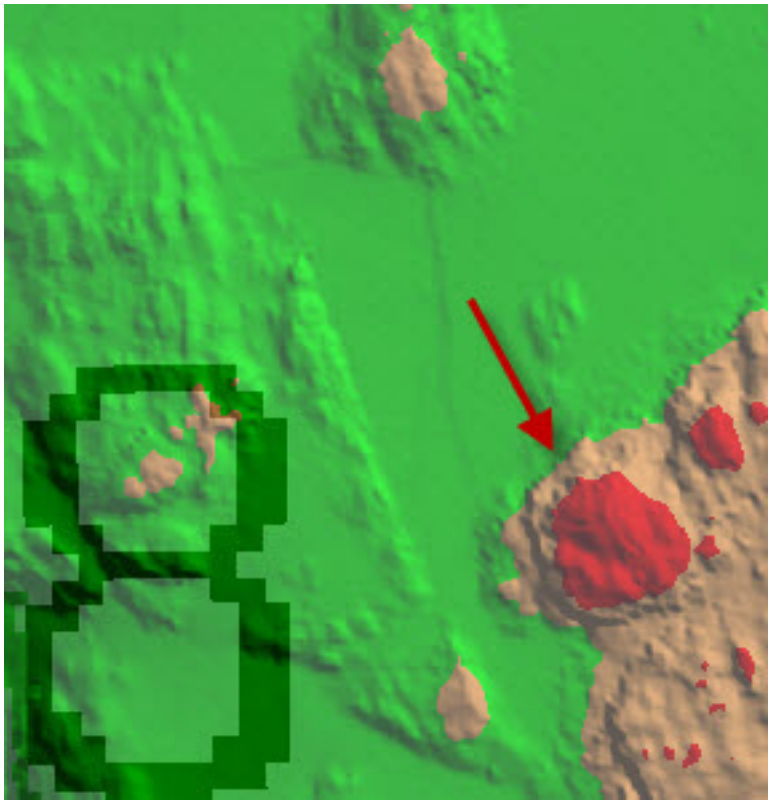


Figure 1.11.1

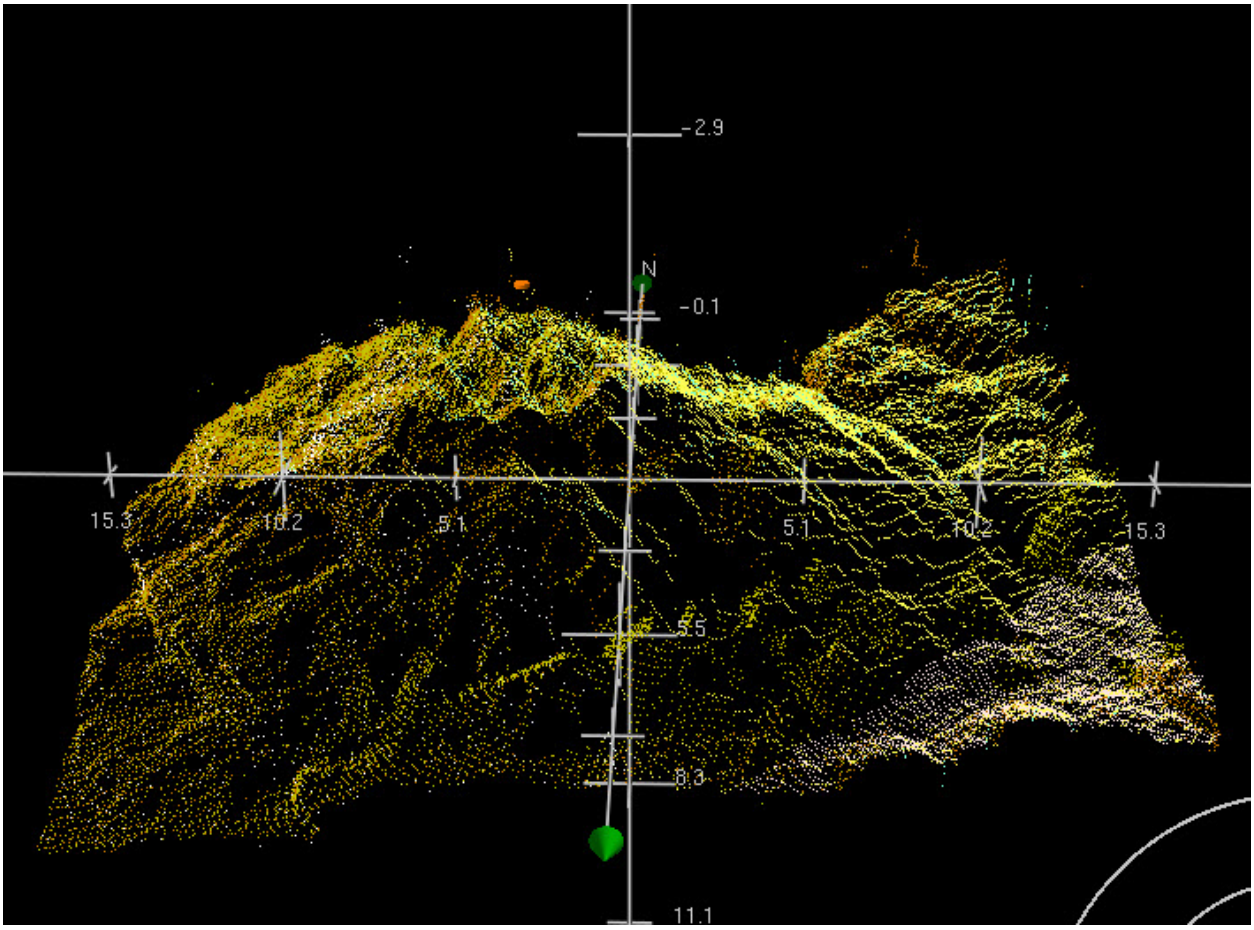


Figure 1.11.2

1.12) 384/225

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 25' 06.9" N, 134° 12' 18.5" W

Least Depth: 1.75 m (= 5.76 ft = 0.960 fm = 0 fm 5.76 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.993 m ; **TVU (TPEv)** ±0.335 m

Timestamp: 2010-282.22:00:52.159 (10/09/2010)

Survey Line: h12063 / fa_2808_rsn8125_tiltedhead_2010 / 2010-282 / 2010m_2822158

Profile/Beam: 384/225

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_rsn8125_tiltedhead_2010/2010-282/2010m_2822158	384/225	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

-1fm 0ft (531_1)

1.8m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 1.755 m

Feature Images

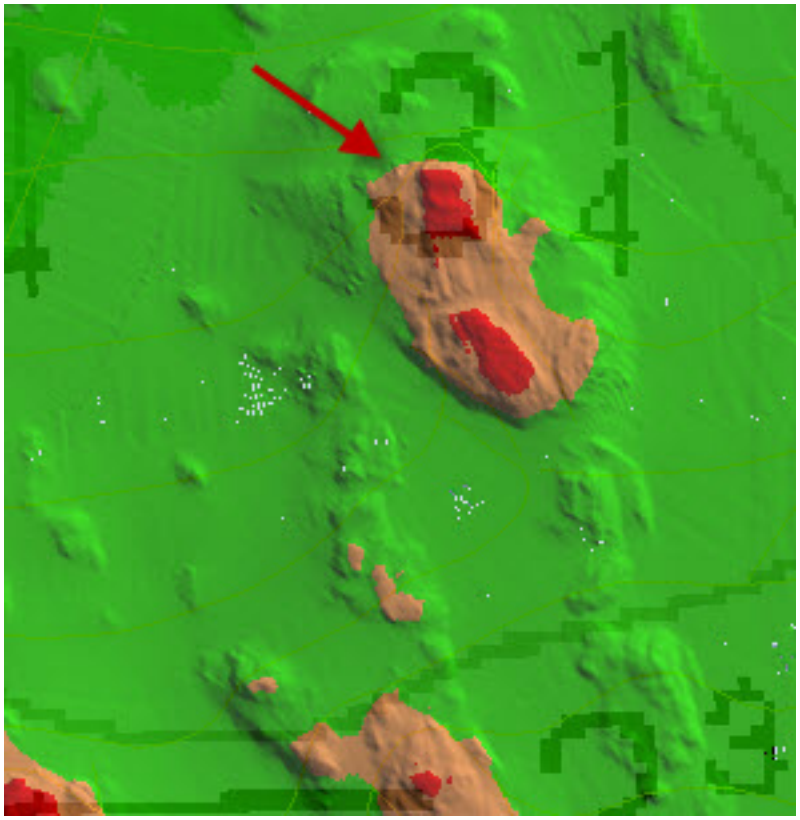


Figure 1.12.1

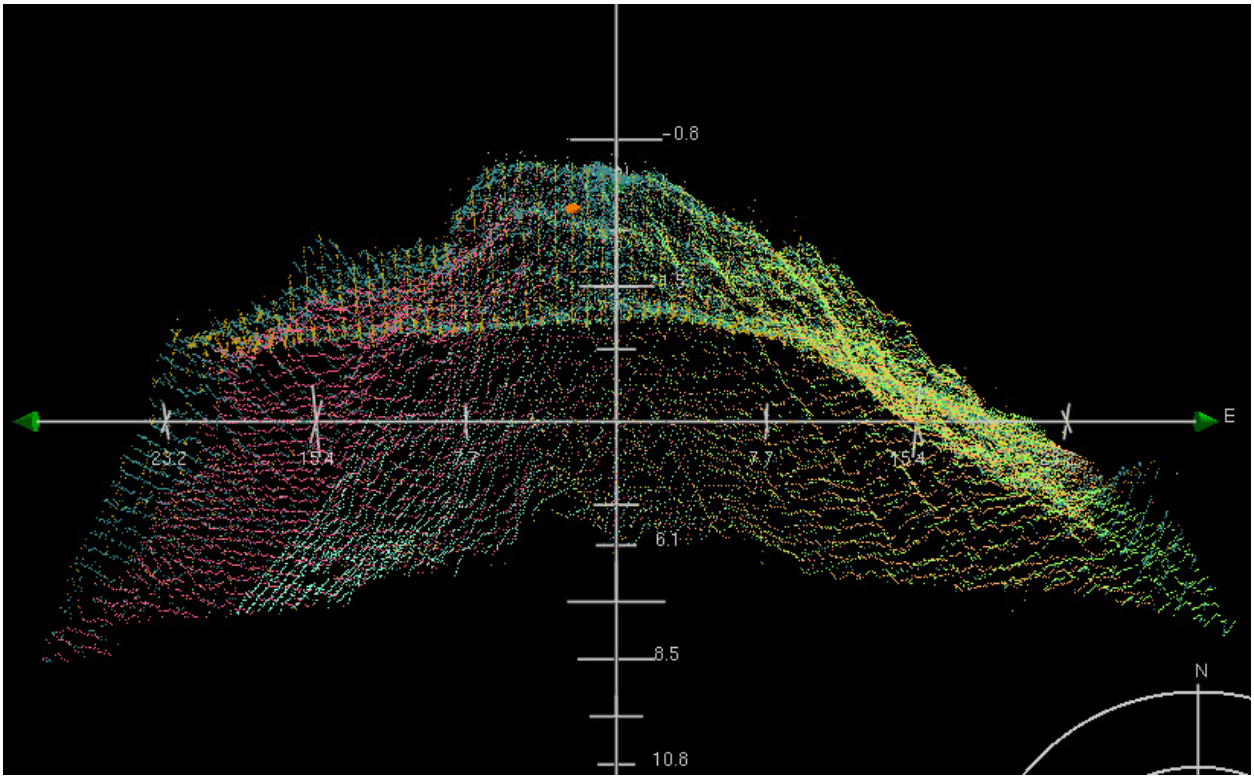


Figure 1.12.2

1.13) 1674/238

DANGER TO NAVIGATION

Survey Summary

Survey Position: 56° 27' 01.9" N, 134° 09' 49.1" W

Least Depth: 4.70 m (= 15.43 ft = 2.572 fm = 2 fm 3.43 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.023 m ; **TVU (TPEv)** ±0.432 m

Timestamp: 2010-284.17:33:38.099 (10/11/2010)

Survey Line: h12063 / fa_2808_rsn8125_tiltedhead_2010 / 2010-284 / 2010m_2841727

Profile/Beam: 1674/238

Charts Affected: 17376_1, 17320_1, 17360_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12063/fa_2808_rsn8125_tiltedhead_2010/2010-284/2010m_2841727	1674/238	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2 ½fm (17376_1, 17320_1, 17360_1, 16016_1, 530_1)

2fm 3ft (531_1)

4.7m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 4.704 m

Feature Images

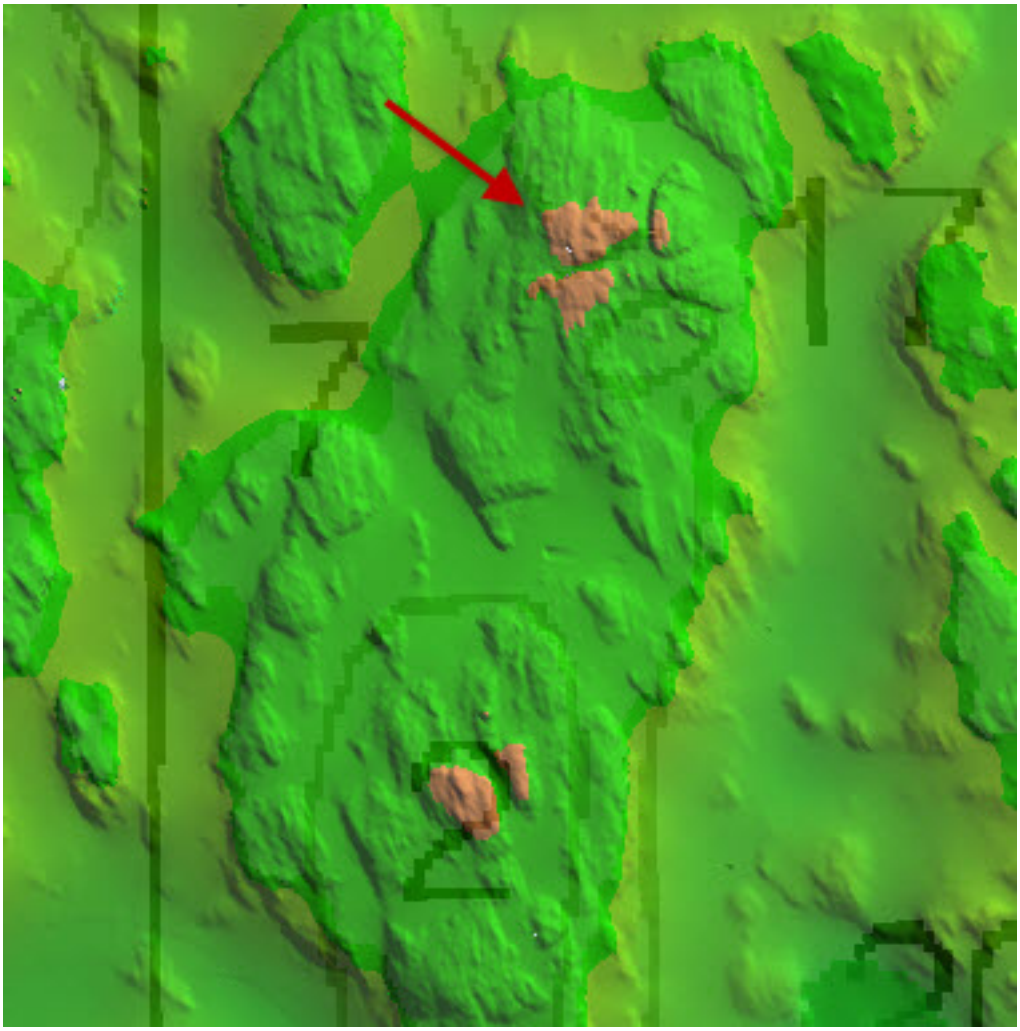


Figure 1.13.1

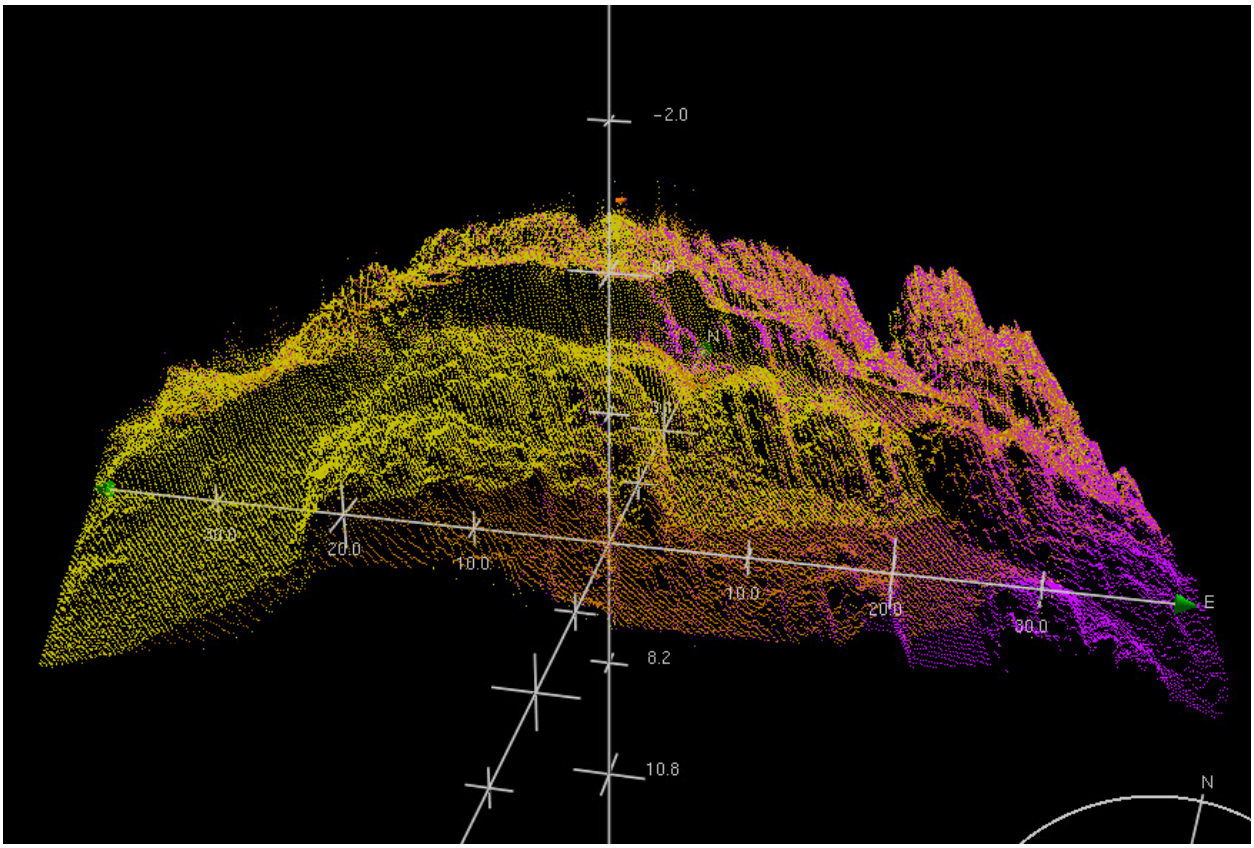


Figure 1.13.2

AWOIS Report

AWOIS Item number 53902 was assigned for investigation. An underwater feature on chart 17376 corresponds to the reported location of 53902 (56/25/30.12N, 134/8/3.4W). See Figure 1.

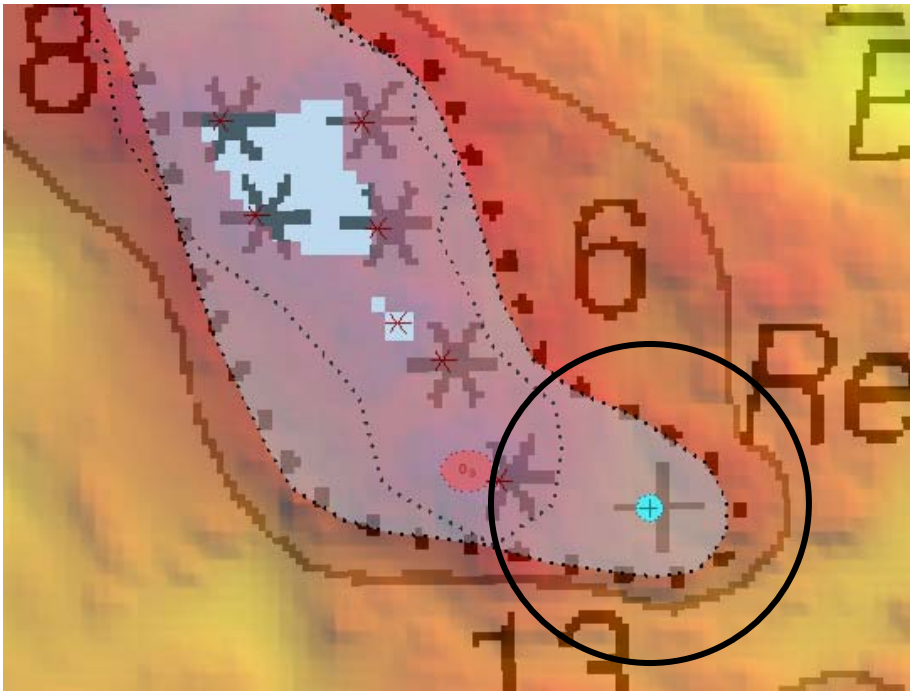
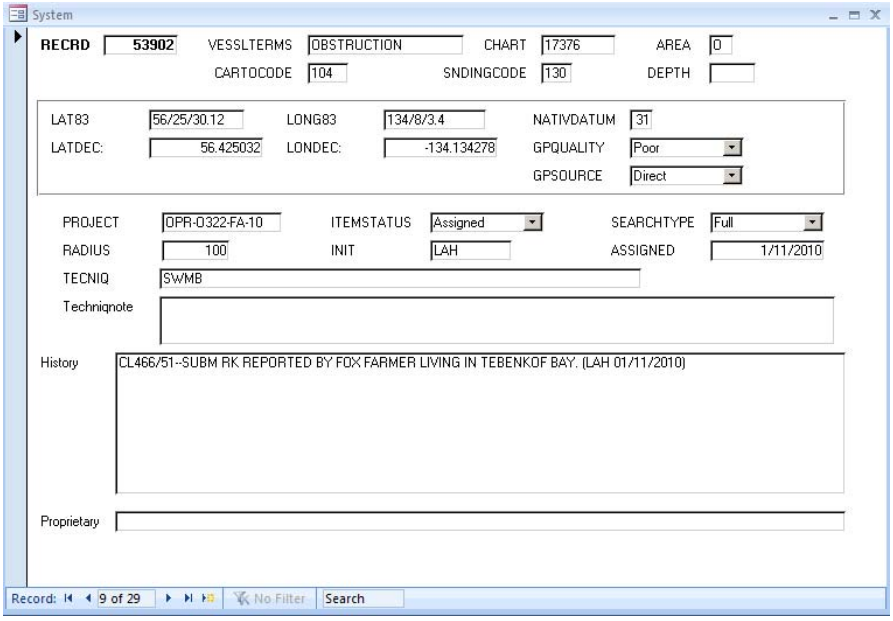


Figure 1 - AWOIS item 53209 in SE, highlighted in blue, search radius in black

The search radius of 100m was conducted using 100% MBES. In the course of acquisition, no sign of AWOIS 53209 was found. Hydrographer recommends removing this item from the AWOIS database.



UNITED STATES DEPARMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : December 02, 2010

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-O322-FA-2010
HYDROGRAPHIC SHEET: H12063

LOCALITY: Southern Tebenkof Bay, Chatham Strait, AK
TIME PERIOD: October 5 - November 8, 2010

TIDE STATION USED: 945-1054 Port Alexander, AK
Lat. 56° 14.8'N Long. 134° 38.8' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.077 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SA237A, SA478, and SA479

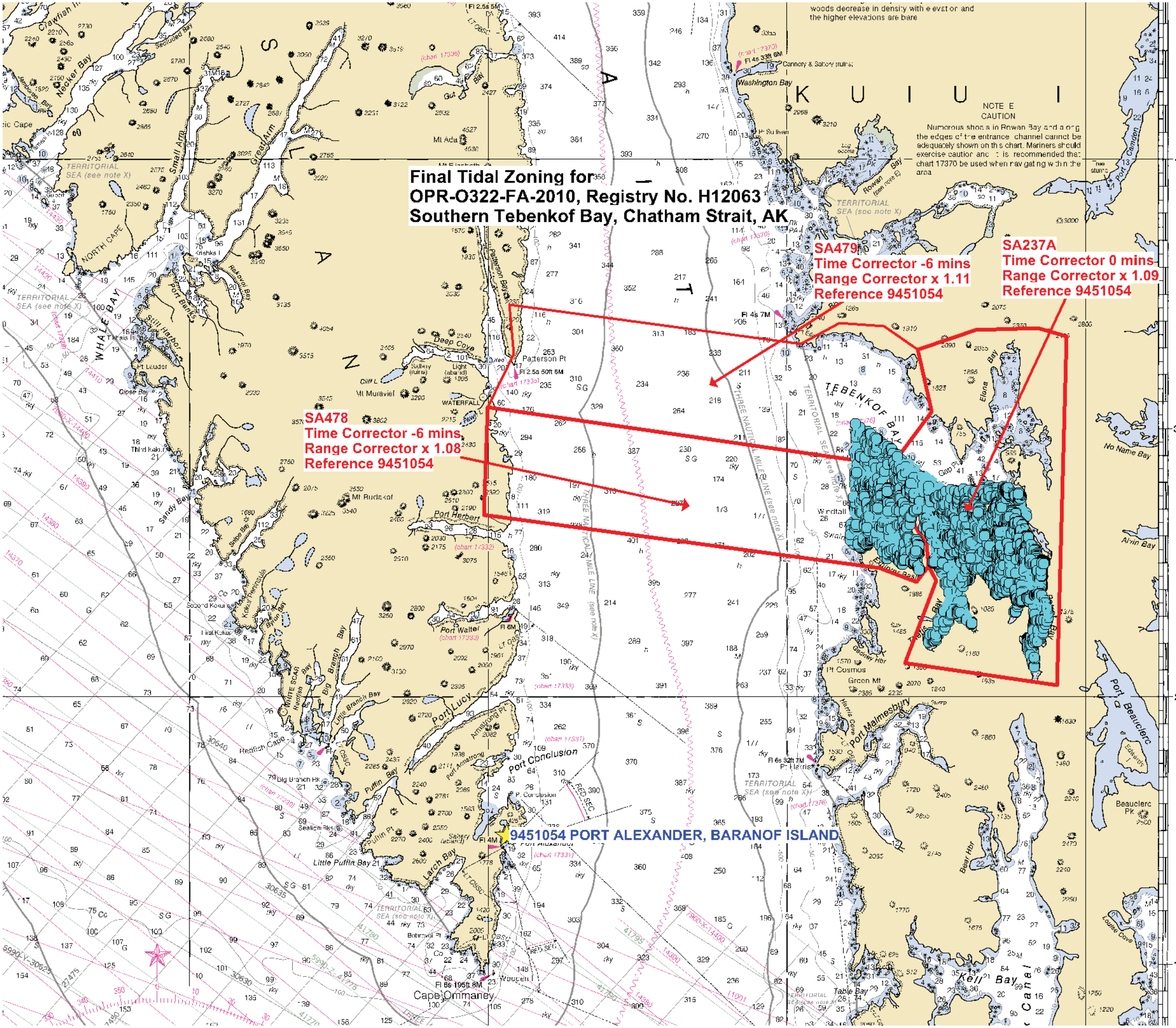
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

Peter J. Stone

Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=Oceanographic Division, ou=NOAA/NOS/CO-OPS, email=peter.stone@noaa.gov, c=US
Date: 2010.12.06 16:12:12 -05'00'

CHIEF, OCEANOGRAPHIC DIVISION


Final Tidal Zoning for
OPR-O322-FA-2010, Registry No. H12063
Southern Tebenkof Bay, Chatham Strait, AK
SA479
Time Corrector -6 mins
Range Corrector x 1.11
Reference 9451054
SA237A
Time Corrector 0 mins
Range Corrector x 1.09
Reference 9451054
SA478
Time Corrector -6 mins
Range Corrector x 1.08
Reference 9451054
9451054 PORT ALEXANDER, BARANOF ISLAND
NOTE E
CAUTION
Numerous shoals in Rowan Bay and along the edges of the entrance channel cannot be adequately shown on this chart. Mariners should exercise caution and it is recommended that chart 17370 be used when navigating within the area
TEBENKOF BAY
KUIU
Cape Ommaney
Port Conclusion
Port Alexander
Port Lucy
Port Walter
Port Herbert
Port Malmesbury
Patterson Pt
Washington Bay
Rowan Bay
Tebenkof Bay
No Name Bay
Alvin Bay
Kell Bay
Port Beauclerc
Beauclerc Pk
Table Bay
Bear Hbr
Gedney Hbr
Pt Cosmos
Green Mt
Whale Bay
Mt Rudakof
Mt Muravief
Mt Ada
Deep Cove
Little Puffin Bay
Puffin Bay
Larch Bay
Big Branch Bay
Little Branch Bay
Redfish Cape
Sandy Bay
Still Harbor
Great Arm
Small Arm
Necker Bay
Secluded Bay
North Cape
Third Kekur
Second Kekur
TERRITORIAL SEA (see note X)
THREE NAUTICAL MILE LINE (see note X)
40'
30'
20'
10'

PHB Compilation Log

General Survey Info

Survey Number	H12063	Field Unit	NOAA Ship Fairweather	State	AK	UTM Zone	8N
Project Number	OPR-O322-FA-10	Project Name (Locality)	Chatham Strait				
Start Date	10/05/2010	Sublocality	Southern Tebenkof Bay				
End Date	11/08/2010	Survey Scale	1:20,000	Compilation Scale	1:40,000		

Affected Raster Charts

Chart	KAPP	Scale	Edition	Date	NTM Date
17376	2701	1:40,000	8th	08/01/2008	10/01/2011

Add Chart | Remove Chart

Affected Electronic Charts

ENC	Scale
US3AK4PM	1:217,828

Add ENC | Remove ENC

Spatial Reference

Horizontal Datum	WGS84
Coordinate System	LLDG
Sounding Datum	MLLW
Vertical Datum	MHW

Junction Surveys

Survey Number	Survey Date	Location Relative to Current Survey
H12183	11/08/2010	West
H12185	11/08/2010	North

Add Survey | Remove Survey

HCell Compiler	Katie Reser	QC Reviewer	Peter Holmberg	SAR Reviewer	Adam Argento

Source Surfaces

Resolution	File Name
8m	H12063_8m_Combined_SAR.csar

Add Surface | Remove Surface

Supporting Documents

Name	Version
Specs and Deliverables	Aug 2011
HCell Specs	6.1

Add Doc | Remove Doc

PHB Compilation Log

Processing Info

Software Used		
Software	Version, HF	Used For
CARIS HIPS	7.0 SP2 HF7	SAR Review. Inspection of Combined BASE Surfaces.
Pydro	11.10	SAR Review. Generation of DTON and AWOIS Reports.
CARIS BASE Editor	3.2 SP1	Creation of soundings and bathy-derived features, meta area objects, and blue notes; Survey evaluation and verification; Initial HCell assembly.
CARIS S-57 Composer	2.2 HF4	Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA.
CARIS GIS	4.4a	Set the sounding rounding variable for conversion of the metric HCell to NOAA charting units with NOAA rounding.
CARIS HOM	3.3 SP3 HF8	Perform conversion of the metric HCell to NOAA charting units with NOAA rounding.
CARIS Plot Composer	5.1 SP2	Generate plots used for QC.
HydroService AS, dKart Inspector	5.1	Validation check of the HCell.
Fugawi Marine ENC	3.1.0.435	Independent inspection of final HCells using COTS viewer.

Product Info

Deliverables	
Chart Scale HCell	H12063_CS.000
Survey Scale HCell	H12063_SS.000
HCell Report for MCD	H12063_HR.pdf
Feature Listing	H12063_FL.txt
Descriptive Report	H12063_DR.pdf
Survey Outline	H12063_Outline.gml and .xsd

Horizontal and Vertical Units

During creation of the HCell all soundings and features are maintained in metric units with as high precision as possible. Depth units for soundings measured with sonar maintain millimeter precision. Depths on rocks above MLLW and heights on islets above MHW are typically measured with range finder, so precision is less.

Depth Units (DUNI)	Fathoms
Height Units (HUNI)	Feet
Positional Units (PUNI)	Meters

Radius Setting

A survey-scale sounding (SOUNDG) feature object layer was built from the Combined Surface in CARIS BASE Editor. A shoal-biased selection was made at survey scale using a Radius Table file with values shown below.

Radius (mm)	Min. Depth (m)	Max Depth (m)
3	-5	10
4	10	20
4.5	20	50
5	50	500

Contours

Depth contours at the intervals on the largest scale chart are included in the SS HCell for MCD raster charting division to use for guidance in creating chart contours. With the exception of the zero contours included in the *_CS file, contours have not been deconflicted against shoreline features, soundings and hydrography.

Charted Contours	Metric Equivalent	Metric- NOAA Rounded	Chart Contours - NOAA Rounded
0 fm	0.0000	0.2286	0.125 fm
3 fm	5.4864	5.715	3.125 fm
10 fm	18.288	18.5166	10.125 fm
50 fm	91.44	92.8116	50.750 fm

Add Contour | Remove Contour

PHB Compilation Log

Additional Info

Contact Information

Inquiries regarding this HCell content or construction should be directed to:

HCell Compiler	Katie Reser
Phone Number	(206) 526-6864
Email	Katie.Reser@noaa.gov

Compilation Comments

The HCells for this survey are also being submitted in un-rounded metric units. The HCell file names follow the traditional convention except with *_Metric added.

APPROVAL SHEET
H12063

The survey evaluation and verification has been conducted according to branch processing procedures and the HCell compiled per the latest OCS HCell Specifications.

Katie J. Reser

Katie Reser
2012.04.09
10:21:53 -07'00'

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disproval of charted data within the survey limits. The survey records and digital data comply with OCS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Peter Holmberg

Digitally signed by Peter S. Holmberg
DN: cn=Peter S. Holmberg, o, ou, email=peter.holmberg@noaa.gov, c=US
Date: 2012.04.09 10:19:03 -07'00'

I have reviewed the HCell, accompanying data, and reports. This survey and accompanying digital data meet or exceed OCS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

David J Zezula LCDR/NOAA

David Zezula
2012.04.09 11:40:14 -07'00'