

H-11236

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. OPR-0331-KR
Registry No. H-11236

LOCALITY

State ALASKA
General Locality Kasaan Bay
Sublocality Twenty Fathom Bank to Skowl Point

2003

CHIEF OF PARTY
..... Christopher D. Kemp

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H-11236

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 AlaskaGeneral Locality Kasaan BaySublocality Twenty Fathom Bank to Skowl PointScale 1:10,000Date of Survey July 20-August 9, 2003Instructions Dated 3/1/2003Project No. OPR-O331-KR-03Vessel Luna SeaChief of Party Christopher D. KempSurveyed by Terra Surveys, LLC personnelSoundings taken by echo sounder, hand lead, pole Reson 8101Graphic record scaled by N/AGraphic record checked by N/AEvaluation by B Taylor Automated plot by HP Design Jet 1055cm+Verification by G NelsonSoundings in Fathoms and tenths at MLLWREMARKS: Time in UTC.**Revisions and annotations appearing as endnotes were generated during office****processing. All separates are filed with the project data. As a result, page numbering****may be interrupted or non-sequential.****Terra Surveys** **John Oswald & Associates****1930 Whiting Circle** **12001 Audubon Drive****Palmer, AK 99645** **Anchorage, AK 99516**

Descriptive Report to Accompany Hydrographic Survey H-11236

Sheet B

Scale 1:10,000

July 20-August 9, 2003

Terra Surveys, LLC

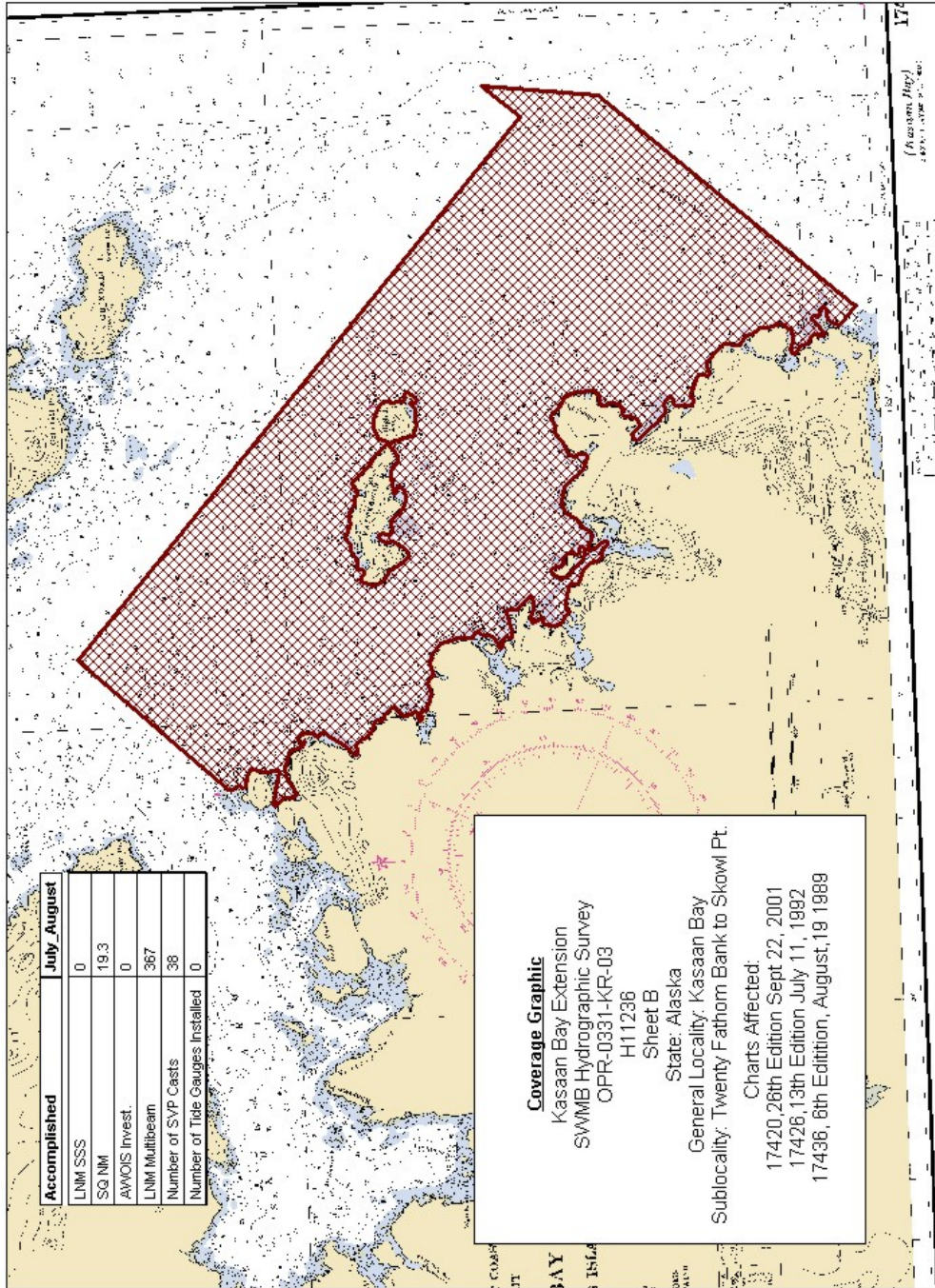
Lead Hydrographer: Chris Kemp

A. AREA SURVEYED

This navigable area survey was conducted in accordance with Hydrographic Project Instructions OPR-O331-KR-03, Kasaan Bay, Alaska dated March 1, 2003.¹ The purpose of this contract was to provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of this area. A shallow-water multibeam sonar system was used to locate and determine the least depth over obstructions, wrecks and shoals as well as to determine the least depths over the entire project area.

The project area is located in Kasaan Bay, Alaska. The survey limits encompass an area of approximately 19.3 square nautical miles and extend from Twenty Fathom Bank to Skowl Point. The area consists of irregular bathymetry, rocky shoreline and variable bottom type. Soundings as shoal as 1.3 fathom above datum and as deep as 141 fathoms were collected during the survey.²

Kasaan Bay is used by both commercial and recreational traffic. The Inter-Island Ferry Authority's ferry, *Prince of Wales*, transports passengers twice a day from Ketchikan to Hollis and return. Commercial vessels in the timber, fishing and tourism industries are often in the area. Common destinations for sport and charter fishing vessels coming from lodges in Kasaan Bay or nearby Ketchikan include Twenty Fathom Bank, Grindall Island and other locations throughout the bay.



Section B Data Acquisition and Processing

B.1 Equipment

Luna Sea

All soundings for this survey were acquired from the motor vessel *Luna Sea*. The *Luna Sea* is a 38-foot aluminum hull boat with a 12.1-foot beam and a 2.25-foot draft. Major systems used on the *Luna Sea* are listed in the following table.

VESSEL <i>Luna Sea</i>	
LOA: 38 FT, BEAM 12.1 FT, DRAFT: 2.25 FT	
Equipment	Manufacturer & Model
Multibeam sonar	Reson SeaBat 8101
Positioning	Seatex Seapath 200 RTK
Sound velocity	Applied Microsystems 3317 4425 3259
Vessel attitude	Seatex MRU-5

Equipment performance details are provided in the Data Acquisition and Processing Report.³

B2. Quality Control

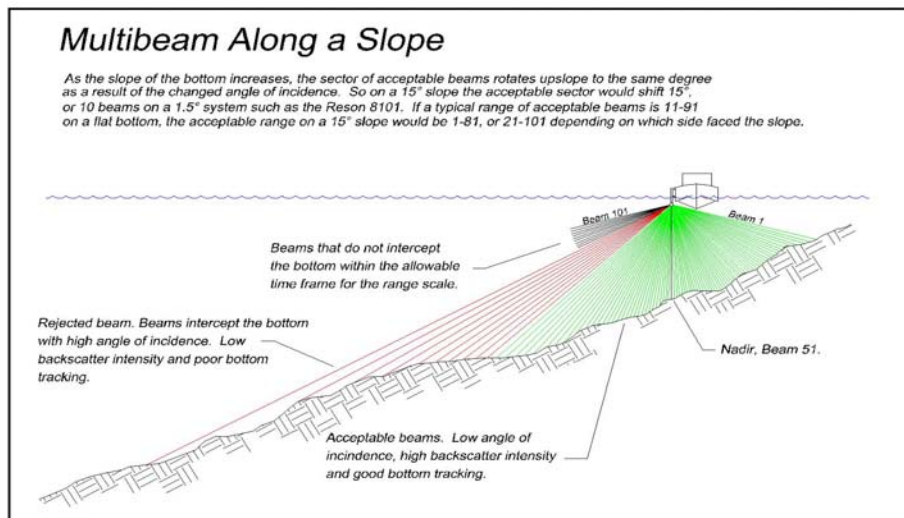
The internal consistency and integrity of the survey data was found to be good.⁴ All of the soundings that appear on the smooth sheet meet or exceed the accuracy requirements in the specifications.

Crosslines

Survey H-11236 had 273 nautical miles of main scheme lines and 18.4 NM of crosslines. This equates to 6.7% of the mainscheme lines and exceeds the requirement of 5% set forth in the Specifications and Deliverables, Sec. 5.5.3. There were 8 crosslines and 146 mainscheme lines. This resulted in 282 crossings, of which, a total of 25 were analyzed. The crossings varied spatially and temporally. A location plot is included in “Separate V Crossline Comparisons.”⁵

The crosslines were analyzed with a program developed in-house in accordance with Specifications and Deliverables 2003, Section 5.5.3. A comprehensive explanation of the program is in the Data Acquisition and Processing Report. The reports generated from the crossline analysis are in “Separate V Crossline Comparisons.”

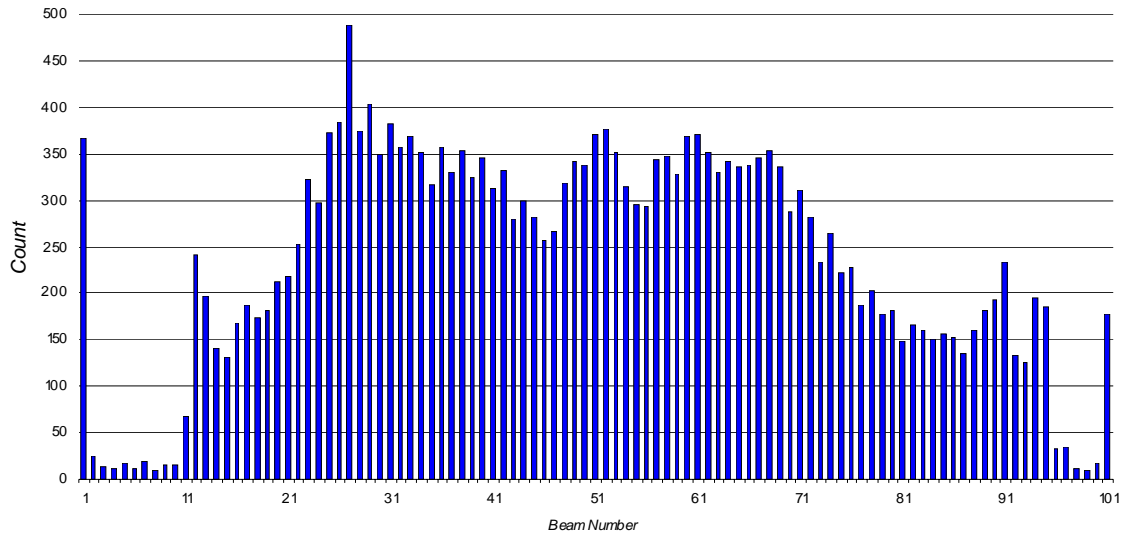
An estimated 95% confidence level generated from crossline analysis was used as a guide in determining data acceptability. In practice, the subjective nature of multibeam data cleaning resulted in a slight variance of final smooth sheet soundings from the estimated 95% confidence level. This is represented by the overlay in the Smoothsheet Sounding Distribution graph on the following page.⁶ Conditions warranting accepting data from outer beams occurred along steep terrain where the outermost beams had a better angle of incidence on the up-hill side. This was often the case, due to the steep slopes encountered through most of the survey. This effect is shown in the following figure.



Smooth Sheet Soundings

Final smooth sheet soundings were compiled into a spreadsheet and plotted. Figure 2 contains two charts, one showing the distribution of soundings by beam number and depth⁷, and below it a histogram depicting the number of soundings per beam on the smooth sheet. The green line represents the 95% confidence level based on the crossline analysis. Tabular results are presented in Table 1. The Reson 8101 multi-beam echo sounder has 101 beams and is numbered from port to starboard, 1-101 with beam 51 representing the nadir beam.

Figure 2.



The histogram brings to attention a few anomalies in the distribution of soundings by beam. The first is the large number of soundings from beam 1 and beam 101. Typically, soundings from outer beams were filtered out during line cleaning. On shallow, near shore lines this filter was not applied to aid in the attainment of soundings at the 4 meter curve. To protect the sounder, mounted on the starboard side of the vessel, shore lines were usually run with the port side to the beach, resulting in a larger number of soundings from beam 1.

The sector of beams from 2-10 and 96-100 shows a very small occurrence of soundings on the smooth sheet. This is a result of a standard practice of filtering out the outer beams. Soundings from these beams were used in the rare occurrence of sparse data density from the central portion of the swath or in areas of excellent data quality.

The distribution through the remainder of the swath is variable but with a slight increase in the number of soundings from the outer beams to the central portion of the swath. Local variances are likely attributable to small biases from beam to beam in the sonar. The increase in soundings towards the center of the swath is likely due to the stronger return signal strength of the near nadir beams, improving data quality and resulting in slightly more accepted soundings than the outer beams.

Table 1.

Sheet B
Number of Smoothsheet Soundings by Beam

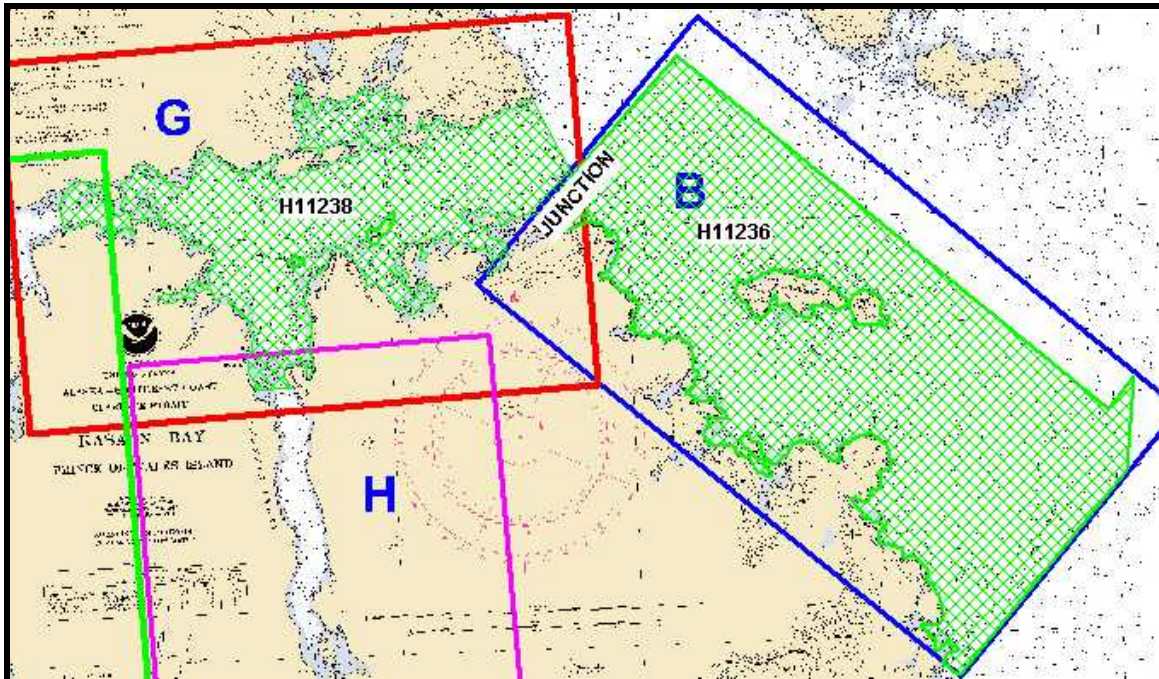
Beam	Count	% of Total
1	366	1.54
2	25	0.10
3	14	0.06
4	12	0.05
5	18	0.08
6	12	0.05
7	20	0.08
8	9	0.04
9	16	0.07
10	16	0.07
11	68	0.29
12	242	1.02
13	196	0.82
14	141	0.59
15	132	0.55
16	168	0.70
17	187	0.78
18	173	0.73
19	181	0.76
20	212	0.89
21	219	0.92
22	252	1.06
23	323	1.36
24	297	1.25
25	373	1.56
26	384	1.61
27	489	2.05
28	375	1.57
29	403	1.69
30	349	1.46
31	382	1.60
32	358	1.50
33	368	1.54
34	352	1.48
35	317	1.33
36	357	1.50
37	330	1.38
38	353	1.48
39	324	1.36
40	346	1.45
41	312	1.31
42	332	1.39
43	280	1.17
44	299	1.25
45	281	1.18
46	256	1.07
47	267	1.12
48	318	1.33
49	342	1.43
50	338	1.42
51	371	1.56

Beam	Count	% of Total
52	377	1.58
53	352	1.48
54	314	1.32
55	296	1.24
56	294	1.23
57	343	1.44
58	347	1.46
59	328	1.38
60	369	1.55
61	371	1.56
62	351	1.47
63	330	1.38
64	342	1.43
65	336	1.41
66	338	1.42
67	346	1.45
68	353	1.48
69	335	1.41
70	288	1.21
71	310	1.30
72	282	1.18
73	233	0.98
74	264	1.11
75	222	0.93
76	227	0.95
77	187	0.78
78	202	0.85
79	178	0.75
80	182	0.76
81	148	0.62
82	166	0.70
83	161	0.68
84	150	0.63
85	156	0.65
86	153	0.64
87	135	0.57
88	160	0.67
89	182	0.76
90	193	0.81
91	233	0.98
92	134	0.56
93	126	0.53
94	195	0.82
95	186	0.78
96	33	0.14
97	35	0.15
98	12	0.05
99	10	0.04
100	17	0.07
101	177	0.74
Total	23837	

Contemporary Survey Junctions

The northwest limits of this survey⁸ junctions⁹ the easterly limits of H11238 (2003, Scale 1:10,000). Both of the smoothsheets for H11236 and H11238 were plotted at the same scale and the soundings for both surveys agreed well.¹⁰ There are no recommendations and no adjustments were made.

Figure 3.



The junction locations of H11236 and H11238

Quality Control Checks

Nadir Beam versus Lead line checks were done daily during the survey. The results of the quality control checks are contained in “Separate I Acquisition and Processing Logs”¹¹ of this report. There were no unique problems that pertain to this survey. Line acquisition logs are also included in “Separate I Acquisition and Processing Logs” that details all required aspects of quality control for each line.

B3. Corrections To Echo Soundings

Hydrographic Survey H11236 was performed with four other surveys in Project OPR-O331-KR-03. Changes to the corrections to echo soundings affect all five surveys in the area and is¹² described in the Data Acquisition and Processing Report.

The tide station at Saltery Cove (945-0495) began collecting data on DN 198; the hydrographic survey began on DN 201. The survey data collected was reduced using Saltery Cove (945-0495).¹³

On DN 202, a roll bias appeared in the data. This was detected on the same day it was collected as a result of preliminary data processing on the survey vessel *Luna Sea*. Roll patch lines were run to solve for the magnitude of the bias and the Caris Vessel Configuration File updated to compensate for the bias. The bias remained and roll patch lines were run daily until DN 204 when it was found the bias was due to a container having shifted in the MRU compartment and leaning along the MRU's roll axis. Rubber bushings between the MRU and the deck for vibration damping allowed the MRU to rotate slightly (from 0.2 to 0.45 degrees). The container was removed and the MRU stabilized. Closer inspection of the data collected during this period using Caris Subset Editor showed the bias to be constant throughout and the data consistent with adjoining survey data when the bias was not present.¹⁴

C. Vertical and Horizontal Control

NOAA tide station Ketchikan (945-0460); tertiary station Saltery Cove (945-0581) and short-period stations Hollis Anchorage (945-0544), Polk Inlet (945-0467), and McKenzie Inlet (945-0466) provided initial and final tide processing for this project. Ketchikan preliminary water level data was downloaded from the NOAA web site (<http://www.cops.nos.noaa.gov>) daily. Verified tide data and final zoning from these stations was processed by John Oswald and Associates (JOA). The stations were installed by Terra Surveys, LLC. Soundings for this survey were tide adjusted using verified data from tertiary station Saltery Cove (945-0581). The final zoning methodology is described in further detail in the project wide Vertical and Horizontal Control Report.¹⁵

The horizontal control datum for this survey is North American Datum of 1983 (NAD 83). The projection used during collection was UTM, Zone 8. United States Coast Guard Station (USCG) *Annette Island* was used to send correctors to the survey vessels. A 24-hour observation on NGS station *CAN 2* was used as a fixed point DGPS performance check on *Annette Island*. The observation survey showed the position on *CAN 2* met the required accuracy standards. The 24-hour observation survey is detailed in the project wide Vertical and Horizontal Control Report. A summary of the daily DGPS confidence checks can be found in “Separate I Acquisition and Processing Logs” included with this report.

D1. Chart Comparison¹⁶

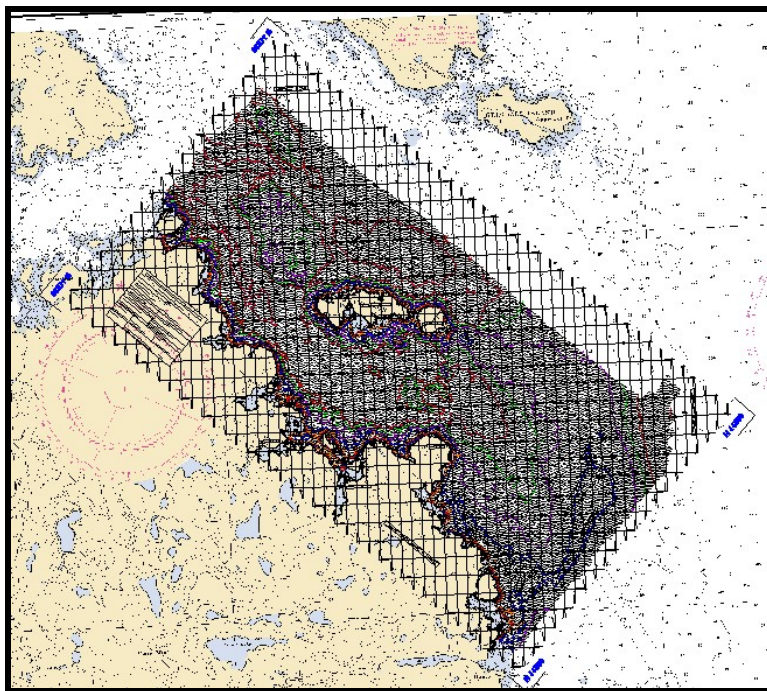
There was no Local Notice to Mariners that affected the survey area. Notice number 39 (Weekly Edition-August 2003) was the last notice reviewed for this project. There were no Dangers to Navigation Reports submitted for this survey.¹⁷

This survey was compared in MicroStation to the following charts:

Chart	Scale	Edition	Date
17420	1:229,376	26 th	Sept. 22,2001
17426	1:40,000 & 1:10,000	13th	July 11,1992
17436	1:40,000	6th	Aug. 19,1989

Charts 17426 and 17436

This survey generally agreed well with the charts. Occasionally, minor disagreements with the curves or soundings were noted.¹⁸ Charted and remote sensing features that differed significantly are discussed on the following pages.¹⁹ Refer to “Section D2 Additional Results” for shoreline investigation results affecting this chart.



Smooth sheet H-11236 overlaid on Chart 17420 for comparison

Charted Shoals

Twenty Fathom Bank is the only charted shoal in this survey. The survey agrees with the chart.²⁰

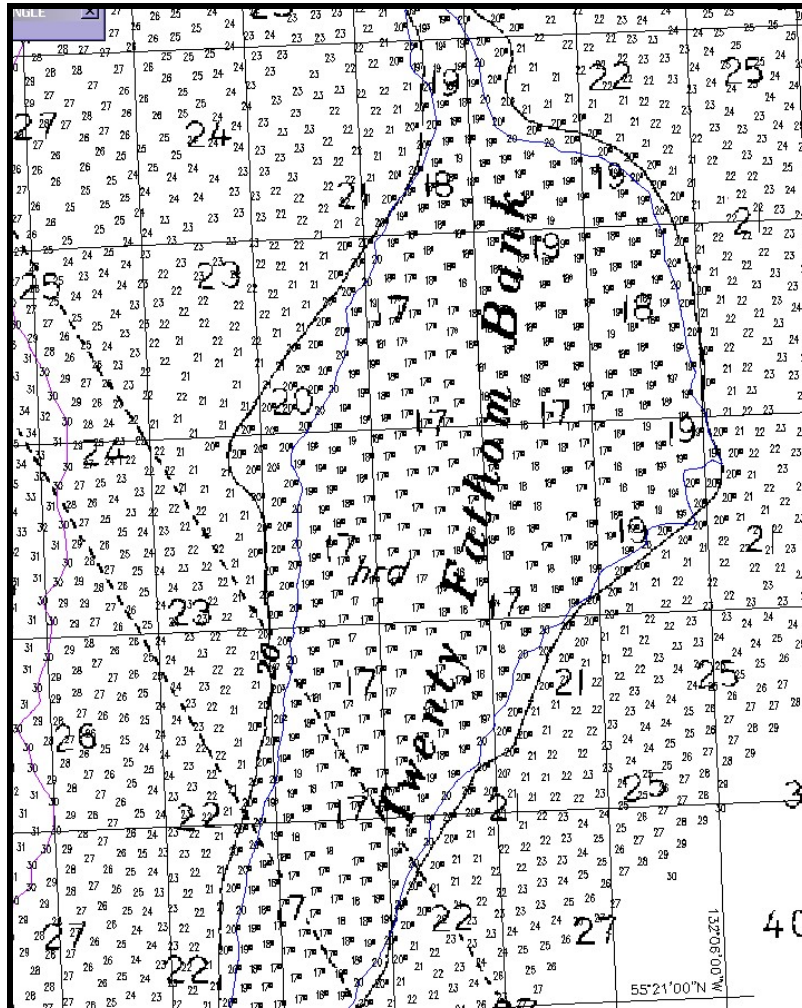


Chart 17426 Overlaid with 2003 soundings and curves

There are no recommendations affecting Twenty Fathom Bank.²¹

New Rocks

There were 11 new rocks identified in this survey from bathymetry. The following is a list of their positions and depths.²²

<u>Latitude</u>	<u>Longitude</u>	<u>Depth fathoms</u>
55° 23' 37.55"N	132° 10' 51.52"W	1.1 ²³
55° 21' 40.04"N	132° 9' 54.96"W	22.0 ²⁴
55° 21' 56.79"N	132° 12' 14.52"W	1.1 ²⁵
55° 22' 35.03"N	132° 5' 48.22"W	34.0 ²⁶
55° 20' 28.20"N	132° 8' 44.37"W	12.8 ²⁷
55° 23' 36.05"N	132° 9' 4.25"W	20.9 ²⁸
55° 20' 25.60"N	132° 7' 51.35"W	14.9 ²⁹
55° 23' 34.57"N	132° 7' 10.79"W	32.0 ³⁰
55° 20' 39.38"N	132° 8' 50.77"W	9.3
55° 21' 27.53"N	132° 10' 12.25"W	2.4 ³¹
55° 20' 07.42"N	132° 8' 47.51"W	9.8 ³²

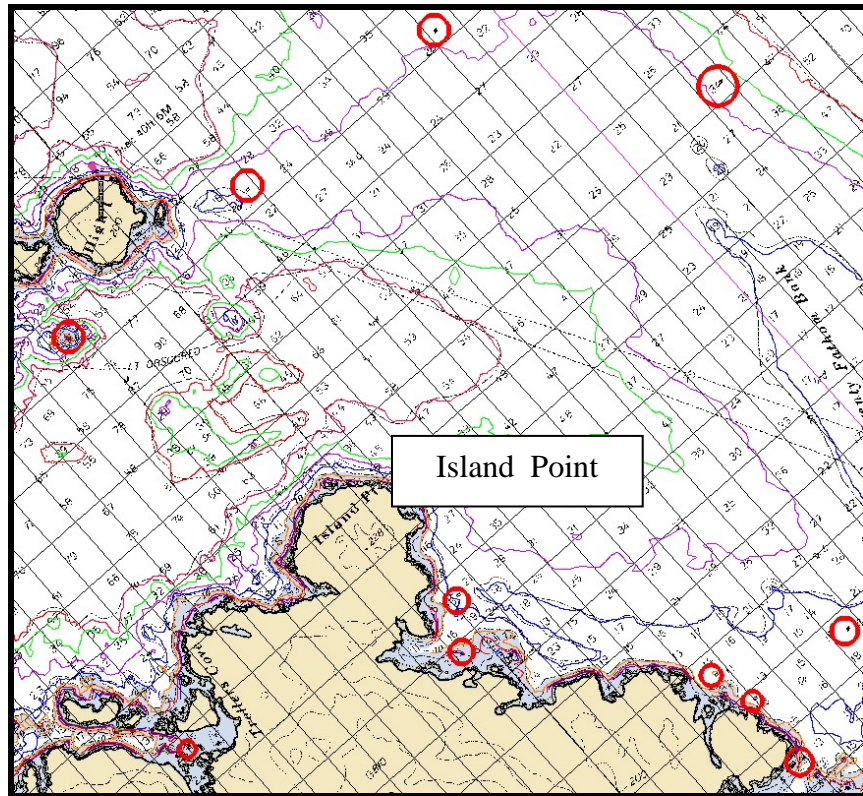


Chart 17426 with new rock positions circled red

Recommendations

Based on the results of survey H-11236, the Hydrographer recommends updating the next editions with the rocks listed.³³

Danger to Navigation Reports

This survey produced one Danger to Navigation Report. The reports and the associated correspondence are included in “Appendix A” of this report.³⁴

A review of the soundings and chart shows a 9.5-fathom³⁵ near a ³⁶16-fathom sounding.

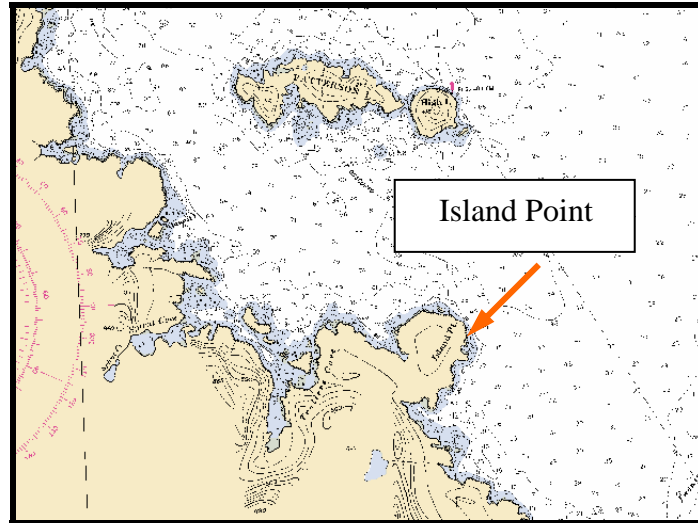
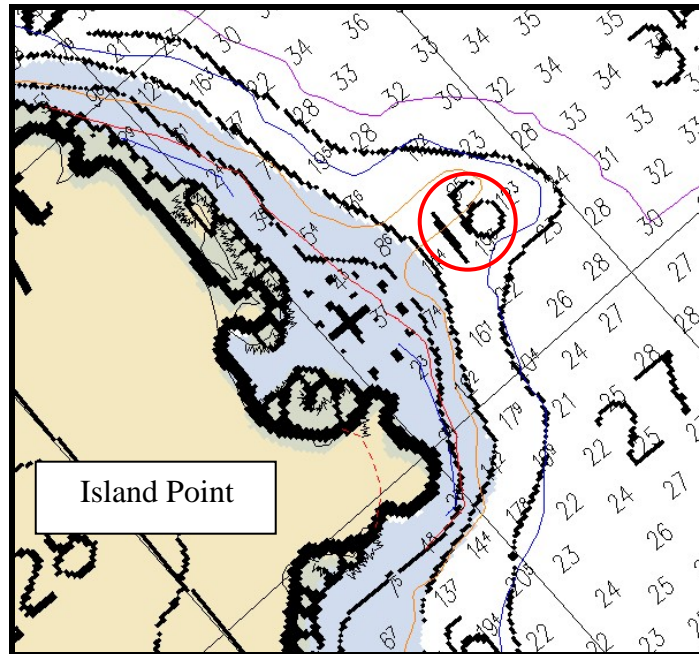


Chart 17426 Location Map³⁷



Detail of Chart 17426 with 2003 soundings

Recommendations

Based on the results of survey H-11236, the Hydrographer recommends replacing the 16-fathom sounding at 55° 22' 05.561"N and 132° 09' 34.401 "W with a 9.5- fathom sounding.³⁸

Trends

A review of the soundings and chart shows a deepening trend in the circled 100-fathom curve below.³⁹

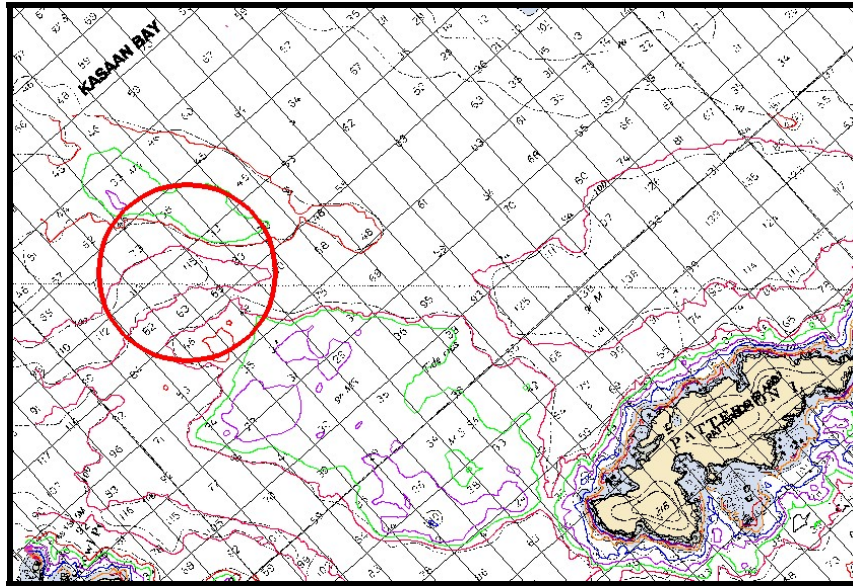
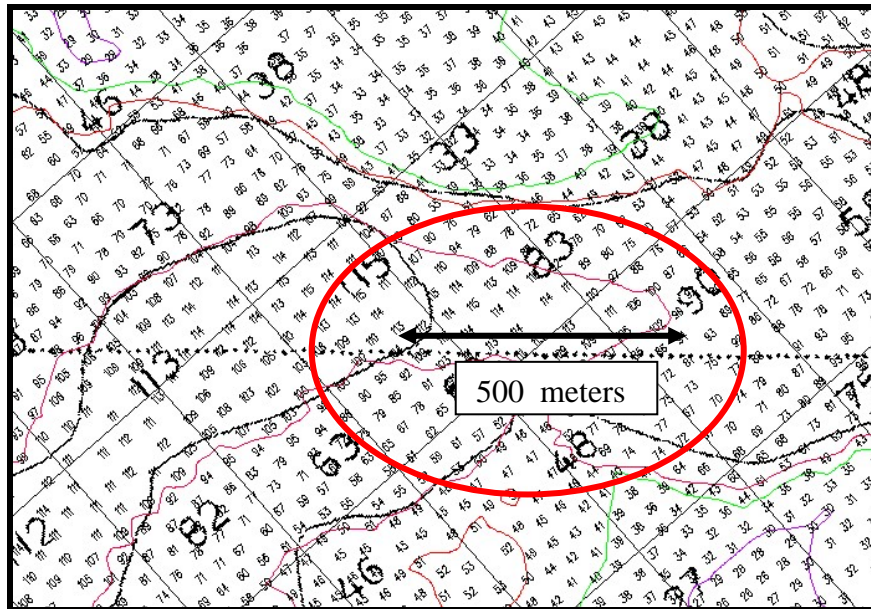


Chart 17426, Location of 100 fathom curve deepening trend



Detail of 100-fathom curve deepening trend

Recommendations

Based on the results of survey H-11236, the Hydrographer recommends updating the next editions using the 2003 soundings to extend the 100-fathom curve at the above location 500 meters southeast.

A review of the soundings and chart shows a deepening trend in the circled 100-fathom curve below.

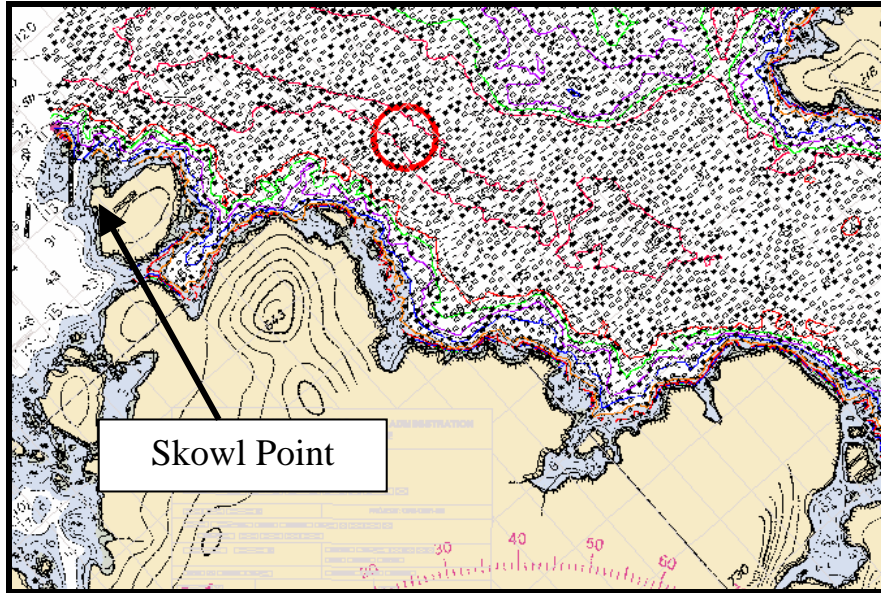
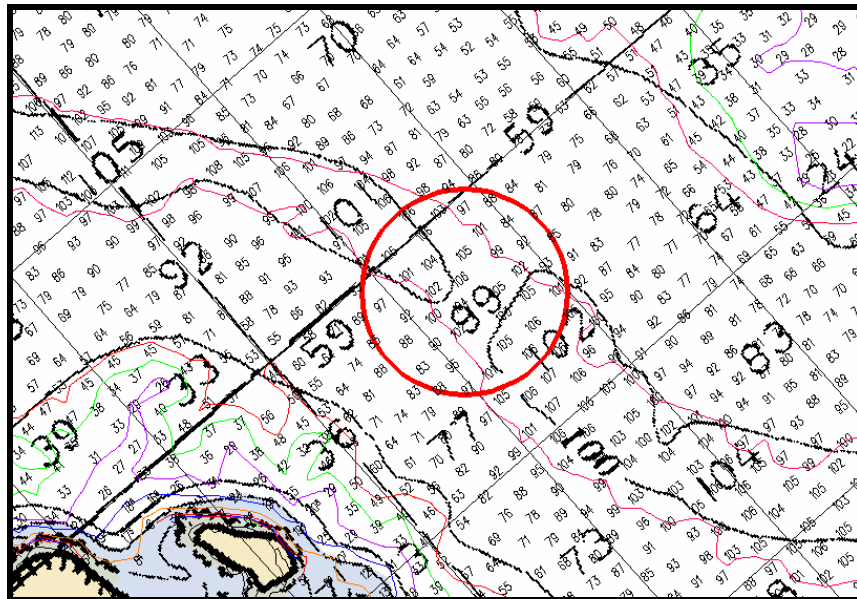


Chart 17426, Location map of deepening 100-fathom curve



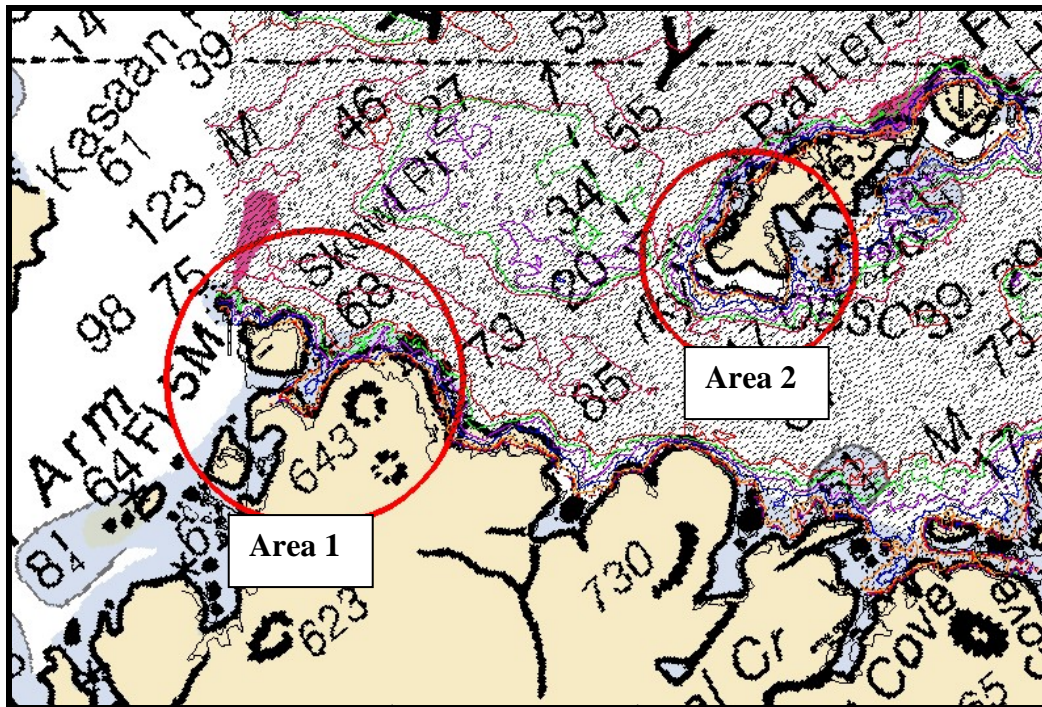
Detail of deepening 100-fathom curve on Chart 17426

Recommendations

Based on the results of survey H-11236, the Hydrographer recommends updating the next edition by using the 2003 soundings to adjust the 100-fathom curve represented in the above images.

Chart 17420

This survey generally agreed well with the chart. There were no outstanding disagreements with the depth curves or soundings. A comparison of the chart and remote sensing data shows a discrepancy of two areas in excess of 200 meters. These areas show the charted shoreline shifted to the east of the remote sensing data. The remote sensing data was verified through traditional and limited methods during this survey and was found to be accurate.⁴⁰



Location of shoreline discrepancy (circled) on Chart 17420 with 2003 soundings

Chart 17420 Area 1

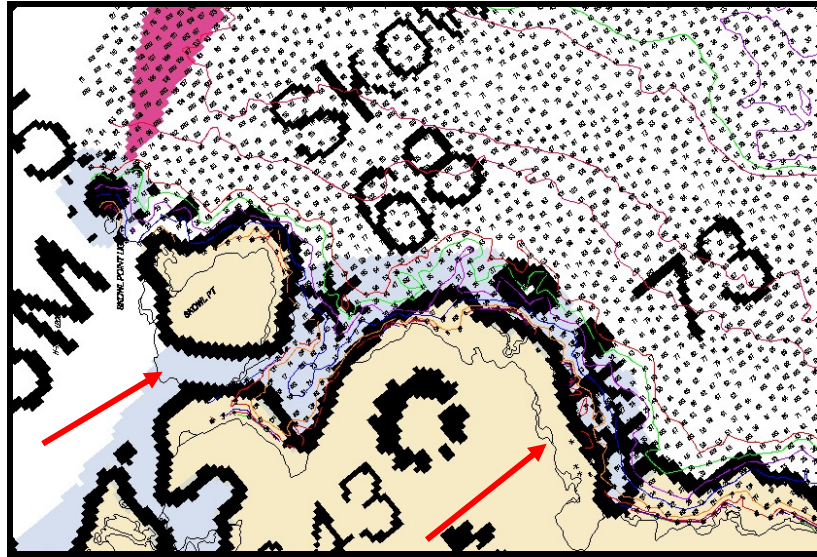


Chart 17420 and 2003 soundings showing remote sensing data shoreline discrepancy

Chart 17420 Area 2

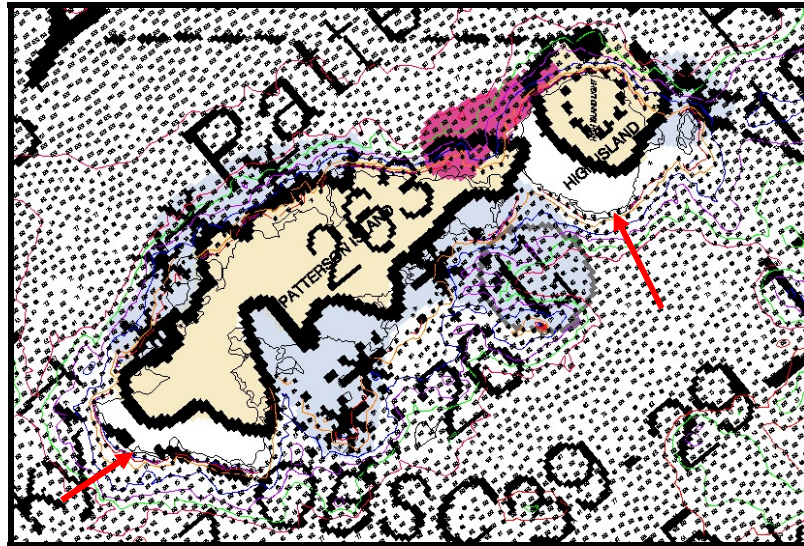


Chart 17420 and 2003 soundings showing remote sensing data shoreline discrepancy

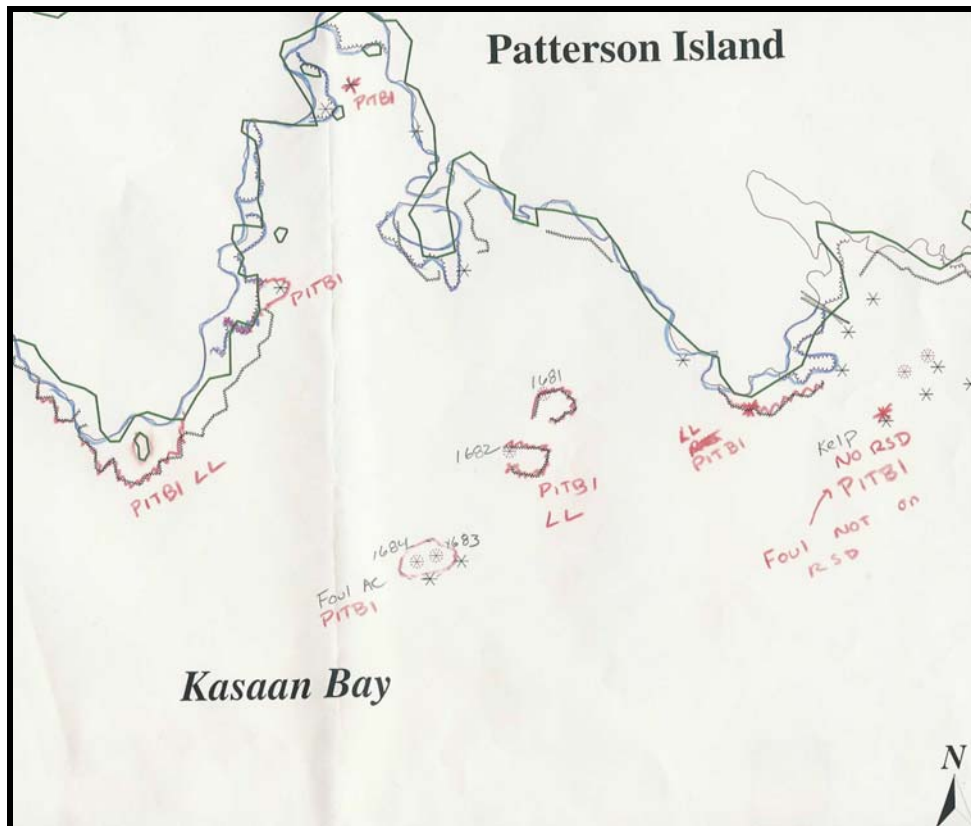
AWOIS Items Summary

There were no AWOIS items assigned to be investigated in H-11236, Sheet B.⁴¹

D2. Additional Results

Shoreline Investigation Summary

Shoreline and near-shore investigation were required for this contract. The ground truth observations agreed well with the remote sensing data (RSD). The field crews worked with shoreline maps showing RSD and charted shoreline, ledge line, islets and rocks. The crews noted agreements, disagreements and sketched any ground-truth changes onto these maps. ⁴² Navigation was achieved through HYPACK software showing the position of the boat in its relationship to both sets of data simultaneously. If a feature was not represented in the RSD or disagreed with the RSD position by more than 20 meters, it was noted as a “Potential Item To Be Investigated” (PITBI) in accordance with SOW 3.4.2.1. The survey also found features that were charted, but not represented on the RSD. Those features were noted as PITBI if they were navigationally significant. ⁴³ The field maps with notes were scanned into jpeg format. The scanned maps were then uploaded via file transfer protocol to the COTR for review.



Typical Field Notes from Shoreline Investigation

The survey identified a portion of shoreline that did not agree with the chart or the RSD. This was discovered during limited verification and is shown as a dashed red line on the smooth sheet.⁴⁴

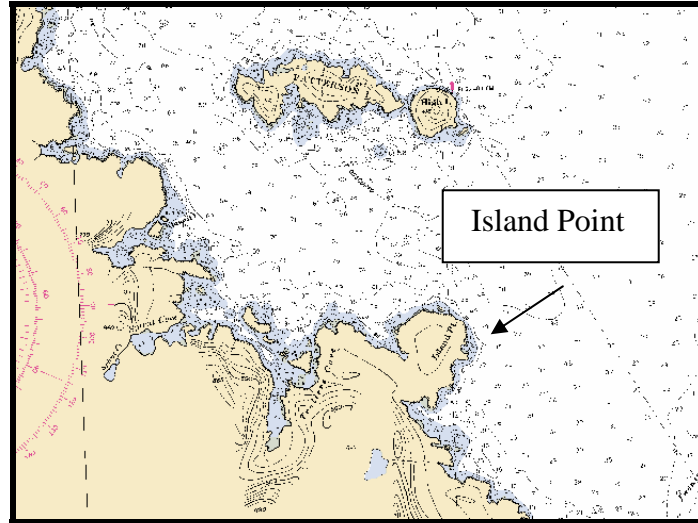
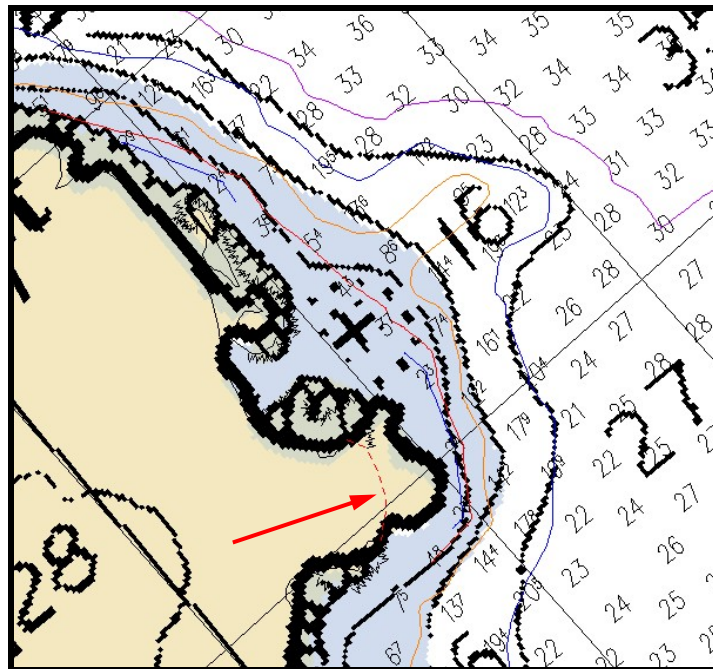


Chart 17426 Location Map



Detail of shoreline change on Chart 17420

This survey identified foul areas⁴⁵ and ledge lines that were not represented on the RSD. Refer to the images below for location maps of these areas.⁴⁶

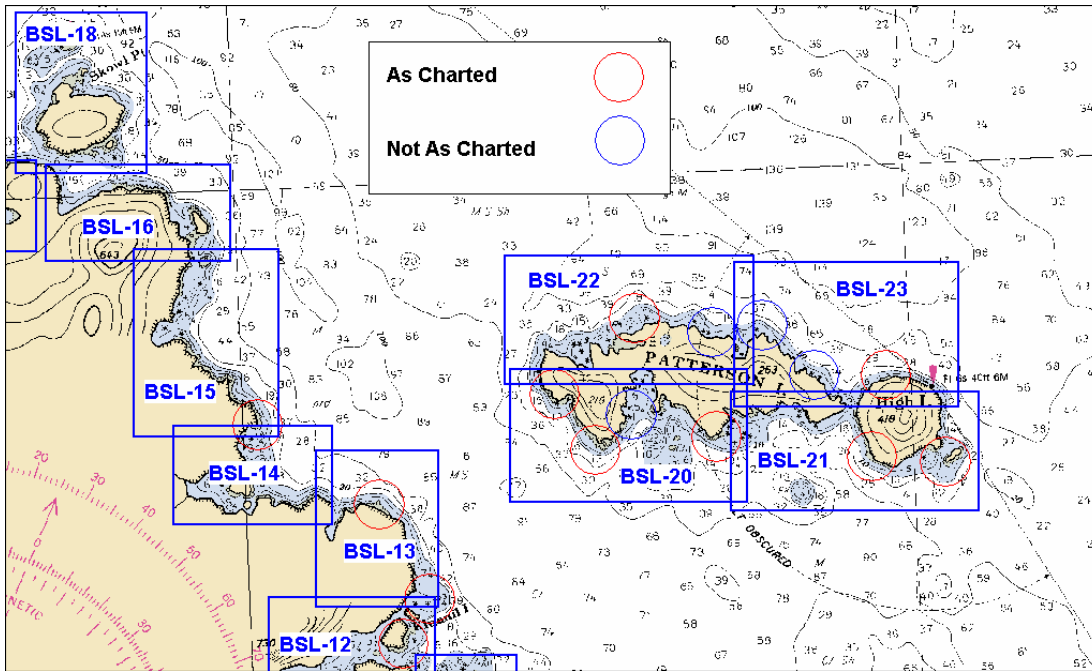


Chart 17426 with charted areas (circled red) and not charted (circled blue) areas not represented by the RSD

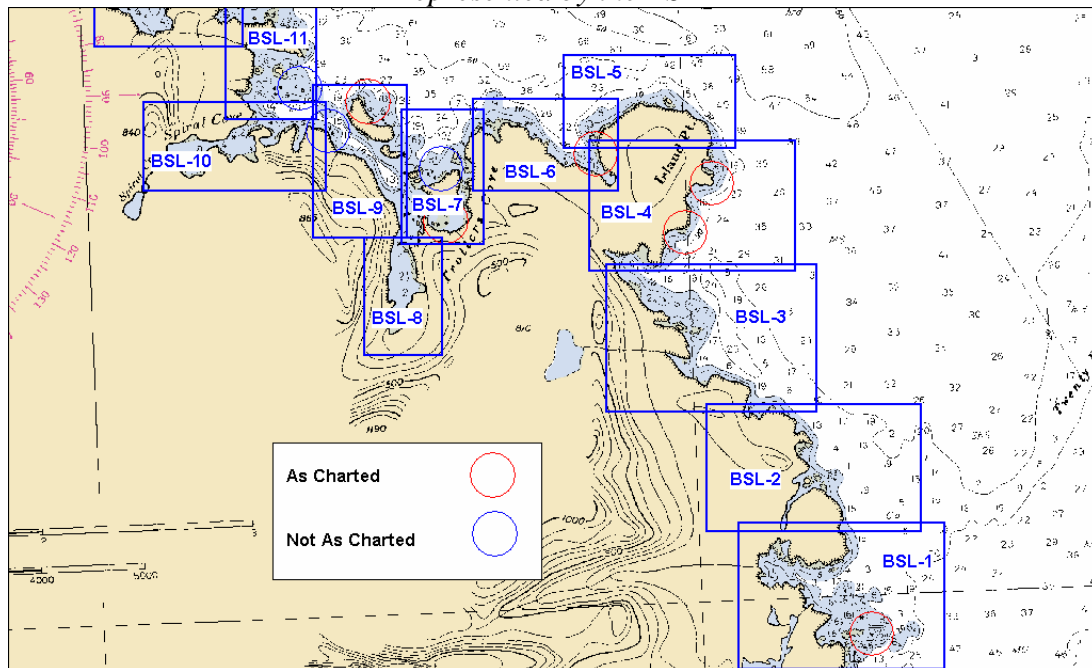


Chart 17426 with charted areas (circled red) and not charted (circled blue) areas not represented by the RSD

Bay Coverage

There is a small bay in the southern portion of the survey where data does not extend to the 4-meter curve. The hydrographer determined that navigation to the 4-meter curve was not prudent here due to a charted rock and copious amounts of kelp at the entrance of the bay.

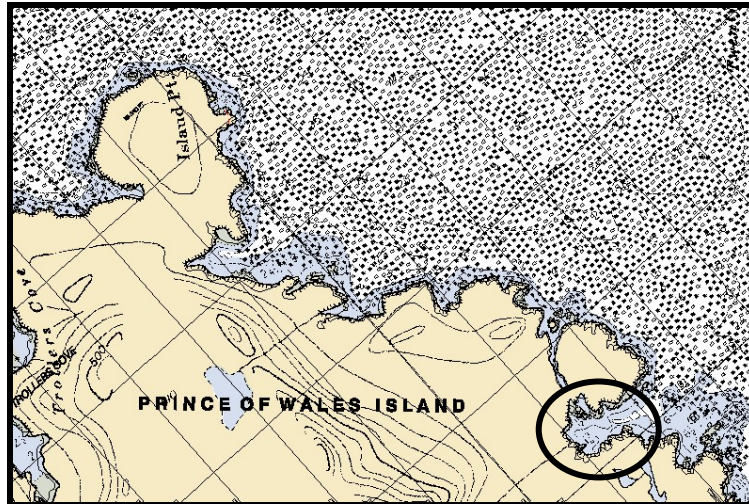
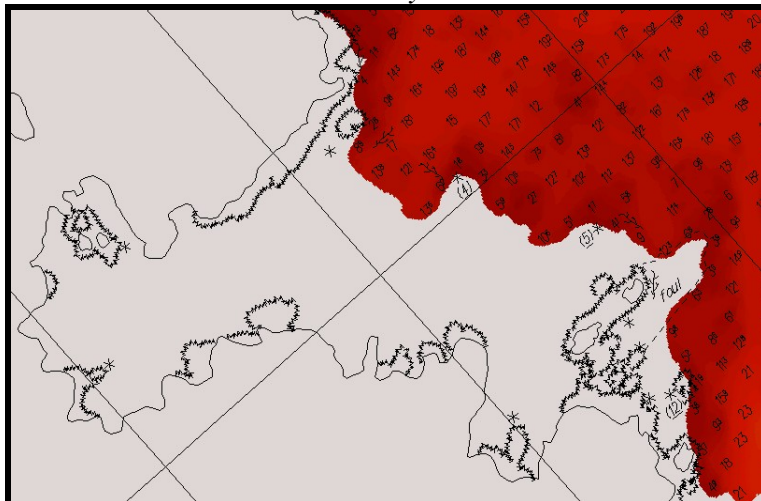


Chart 17426 with bay location circled



Close up of bay with digital terrain model, soundings and kelp symbols

Recommendations

Based on the results of survey H-11236, the Hydrographer recommends retaining charted foul and ledge lines not represented by the RSD.⁴⁷ The hydrographer also recommends further investigation into the features not charted that were discovered through shoreline verification.⁴⁸

Traditional Verification Offshore of 4-meter Curve

Offshore features separated by navigable water from the mean high water line were verified by detached position per SOW 3.4.3. A detached position log of the items follows.⁴⁹ All of the items are represented on the smoothsheet.

Target Number	Height(-) /Depth(+) above water surface	Time UTC	Calendar day	Height(-) Depth(+) Ref MLLW	On RSD	On Chart
1607	-2	18:11:56	7/20/2003	-3.48	yes	yes
1608	0	18:21:27	7/20/2003	-1.32	no	yes
1609	-1	18:40:40	7/20/2003	-2.15	yes	no
1614 ⁵⁰	0	19:12:12	7/20/2003	Ledgeline	yes	yes
1615 ⁵¹	0	19:09:41	7/20/2003	Ledgeline	yes	yes
1618 ⁵²	0	19:22:00	7/20/2003	Ledgeline	yes	yes
1620	-1.5	20:34:51	7/20/2003	-2.29	yes	no
1626 ⁵³	0	22:18:47	7/20/2003	Island	yes	yes
1628	-2	22:25:22	7/20/2003	-3.80	yes	yes
1670	-2	20:28:42	7/22/2003	-3.58	yes	yes
1671	0	20:40:14	7/22/2003	-1.53	yes	yes
1672	0.5	20:57:27	7/22/2003	-0.97	yes	yes
1673	0	21:41:21	7/22/2003	Island	yes	yes
1677	-1.5	14:17:05	7/25/2003	-2.03	yes	yes
1678	-2	14:34:00	7/25/2003	-2.67	yes	yes
1679	-0.5	14:37:00	7/25/2003	-1.25	yes	yes
1680 ⁵⁴	-3	14:58:23	7/25/2003	-3.89	yes	yes
1680 ⁵⁵	-0.5	14:37:14	7/25/2003	-1.25	yes	yes
1681 ⁵⁶	-1	15:00:57	7/25/2003	-1.87	yes	yes
1683	0.05	15:05:03	7/25/2003	-0.89	yes	yes
1684	-0.5	15:07:47	7/25/2003	-1.55	yes	yes
1685	-2	13:27:58	7/26/2003	-2.09	yes	yes
1687	-2	13:30:30	7/26/2003	-2.10	yes	yes
1691	-1.5	15:16:03	7/26/2003	-1.95	yes	yes
1692	-1.5	15:17:40	7/26/2003	-1.94	yes	yes
1693	-1.5	15:19:18	7/26/2003	-2.03	yes	yes
1694	-1	15:26:26	7/26/2003	-1.59	yes	no
1695	-5	15:28:26	7/26/2003	-5.56	yes	yes
1696	0	15:32:43	7/26/2003	-0.65	yes	yes
1697	-0.5	15:39:03	7/26/2003	-1.20	yes	yes
1995	0	16:41:32	8/16/2003	-0.64	yes	yes
1996	-1	16:49:37	8/16/2003	-1.45	no	no
1997	-0.4	17:09:26	8/16/2003	-0.70	no	no

Aids to Navigation:

There are two aids to navigation to report in survey H-11236. Both navigation aids appear to serve their intended purpose and were located °within an acceptable range of their charted positions and the 2003 Light List vol. VI, recorded position.⁵⁷

Skowl Point Light (22380)

Skowl Point Light was found in good condition and appears to serve its intended purpose.

USCG Light List name: Skowl Point Light

Name on chart: No name

USCG Light List number: 22380

Characteristics: Fl W 4s

Height: 15 feet

Range: 5 nautical miles

Structure: NR on skeleton tower

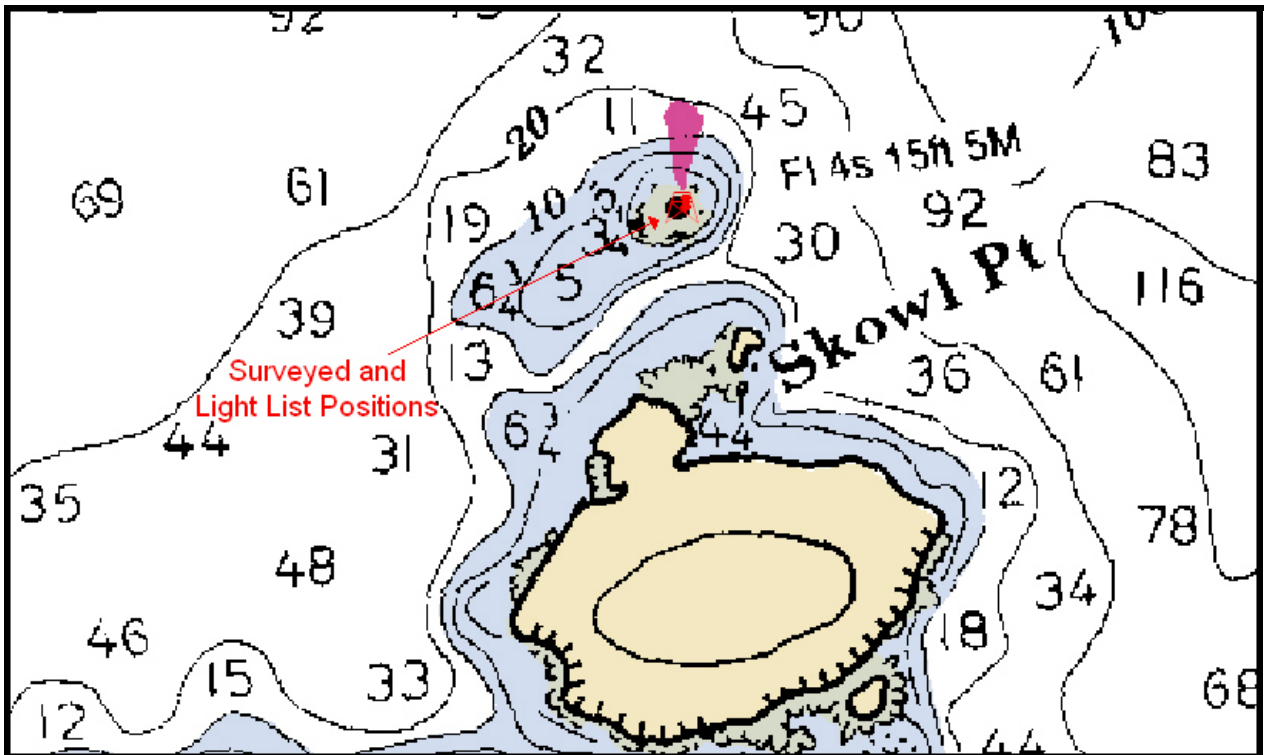
Light List published position: Lat 55°25'39"N Long 132°16'11"W

2003 Surveyed position: Lat 55°25'39.4"N Long 132°16'08.4"W

Recorded on: 07/21/2003 17:33:48 UTC



Skowl Point Light (22380)



Skowl Point Light, Chart 17426

High Island Light (22375)

High Island Light was found in good condition and appears to serve its intended purpose.

USCG Light List name: High Island Light

Name on chart: No name

USCG Light List number: 22375

Characteristics: Fl W 6s

Height: 40 feet

Range: 6 nautical miles

Structure: NR on skeleton tower

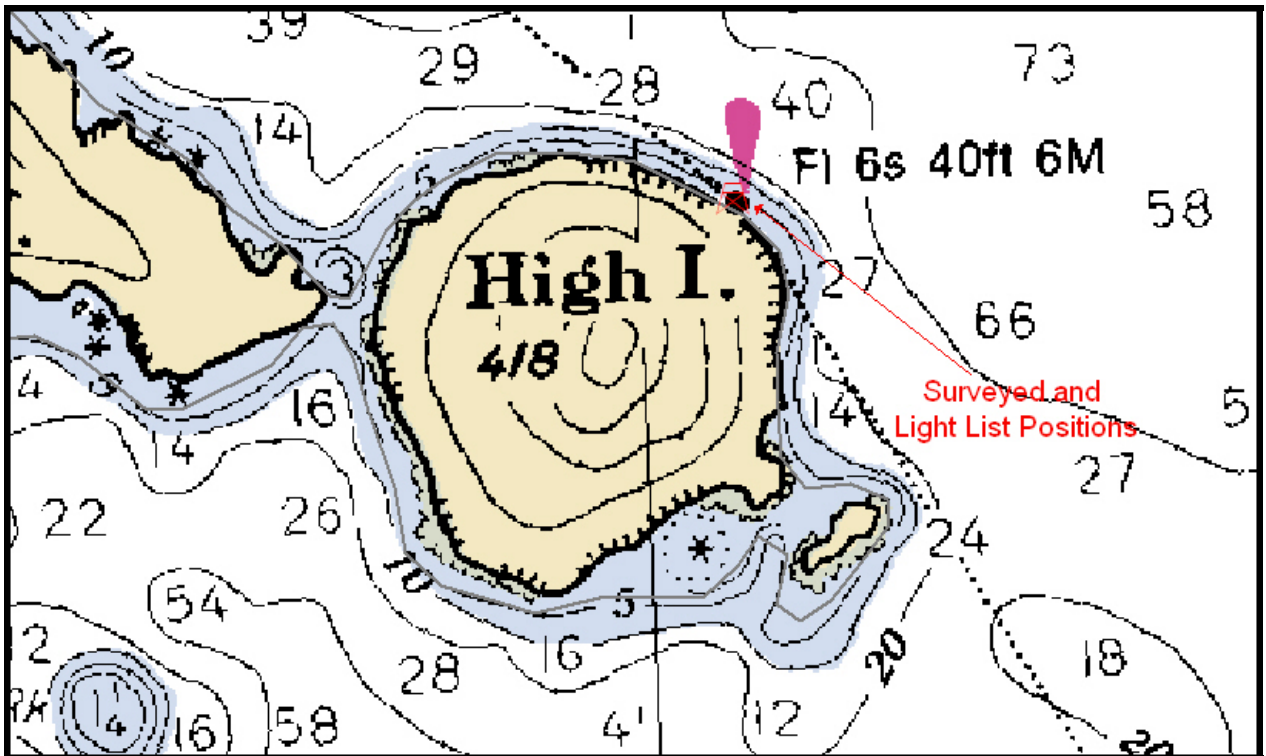
Light List published position: Lat 55°24'05"N Long 132°09'54"W

2003 Surveyed position: Lat 55°24'03.2"N Long 132°09'50.4"W

Recorded on: 07/21/2003 14:00:19 UTC



High Island Light (22375)




Skowl Point Light, Chart 17426

LETTER OF APPROVAL
REGISTRY NO. H11236

This Report and the accompanying smooth sheet are respectfully submitted.

Field operations contributing to the accomplishment of survey H11236 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report, smooth sheet, digital data, and accompanying records have been closely reviewed and are considered complete and adequate as per the Statement of Work. Other reports submitted with this survey include Data Acquisition and Processing Report, Vertical and Horizontal Report, and the Shoreline Verification Field Notes.

I believe this survey is complete and adequate for its intended purpose.



Chris Kemp, Hydrographer
Terra Surveys, LLC

Date 12/18/2003

APPENDIX I

Dangers to Navigation

Hydrographic Survey Registry Number: H11236

Survey Title: State: Alaska Locality: Kasaan Bay Sub-locality: Twenty Fathom Bank to Skowl Pt.

Project Number: OPR-O331-KR-03

Survey Dates: August 2003

Depths are reduced to Mean Lower Low Water using (predicted / verified) tides. Positions are based on the NAD83 horizontal datum.

CHARTS AFFECTED:

Chart	Scale	Edition	Date
17426	1:40,000	13 th	07/11/1992
17436	1:40,000	6 th	08/19/1989
17420	1:229,376	26 th	09/22/2001

DANGERS:

Feature	Depth(ft or fms)	Latitude	Longitude
Sounding	9 fms 3 ft	55° 22' 05.6" N	132° 09' 34.4" W ⁵⁸

COMMENTS:

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at 206-526-6835

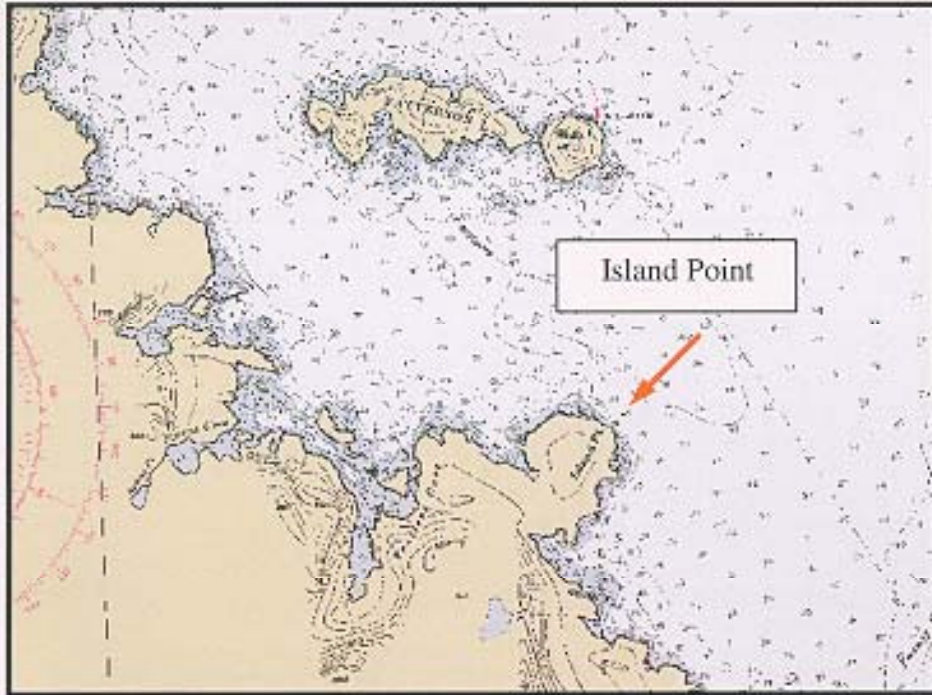
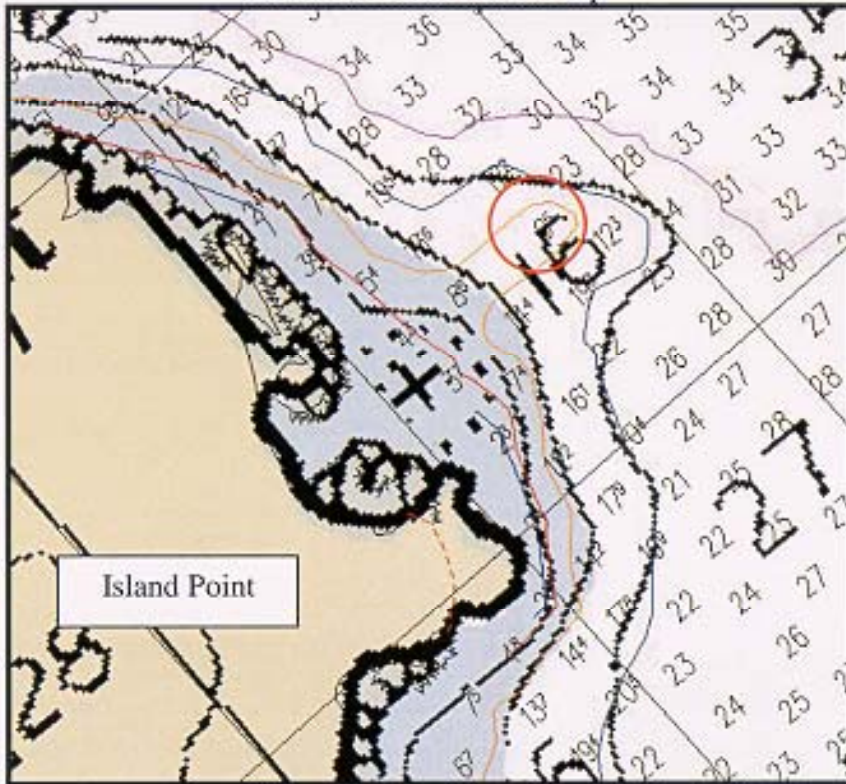


Chart 17426 Location Map



Detail of Chart 17426 with 2003 soundings

APPENDIX II

List of Geographic Names

There were no corrections or new geographic names to report on within the limits of the survey area.

APPENDIX III

Progress Sketch

APPENDIX IV

Tides and Water Levels

2003 FIELD and FINAL TIDE NOTE

Hydrographic Sheet: H11236

Sheet B

Twenty Fathom Bank to Skowl Point

Kasaan Bay, Alaska

NOAA Project No:	OPR-0331-KR-2003 Kasaan Bay, Alaska				
NOAA Contract No:	50-DGNC-0-90003				
The NOS Ketchikan, AK tide station (945-0460) served as control for the subordinate stations on this project. Datum determinations were made for the tertiary subordinate stations: Saltery Cove (945-0496) and Hollis Anchorage (945-0544). The NTDE 1983-2001 was utilized.					
Location and Time Meridian	Name:	Lat (NAD83)	Long(NAD83)	Time Meridian:	
	Saltery Cove	55° 24' 07"	132° 19' 53"	0° (UTC)	
	Hollis Anchorage	55° 29' 45"	132° 38' 30"	0° (UTC)	
Time Period and Datum Reference	Name:	Established:	Removed:	MLLW	MHW
	Saltery Cove	7/17/2003	9/3/2003	0.000 m	4.472 m
	Hollis Anchorage	8/12/2003	9/1/2003	0.000 m	4.594 m
Tide Observer	Terra Surveys, LLC 1930 South Whiting Circle Palmer, Alaska 99645 (907) 745-7215				
Gauges	Design Analysis Ass. H350XL/355 bubbler systems.				
Install Type	Each gauge was secured inside a waterproof case, and fastened vertically inside of an enclosed Rubbermaid garden toolshed. Refer to the tide station package for additional site specific details of installation.				
Tide Staff	No tide staff was installed. Levelling was performed from a tidal bench mark to the water surface. The water height was read using a metric rod with a stilling well attached to remove interference from waves.				
Bench Marks	The following bench marks were installed at these sites: Saltery Cove: none Hollis Anchorage: none The following bench marks were recovered at these sites: Saltery Cove: BM 2 1921, BM 3 1921, BM 4 1958, BM 5 1958, BM 6 1959 Hollis Anchorage: BM 1 1924, BM 2 1924, BM 3 1924, BM 4 1953, BM 5 1960				
Levels	Bench marks were levelled at the installation and removal of the tidal stations. The bench marks and station datums were connected through frequent water level measurements. The level runs closed within NOS tolerance.				
Final Tidal Zoning	This sheet is covered by zone SA100 and SA38.				
Reduction of Hydrographic Data	Six minute tide data reduced to MLLW and smoothed with a 5th order 5 hour polynomial curve fit and was provided to Terra Surveys, LLC (prime contractor) by John Oswald and Associates (JOA) throughout the field season. In October of 2003, JOA finalized datums and forwarded all data necessary to reduce hydrographic soundings to the prime contractor.				

Revisions Compiled During Office Processing and Certification

¹ Concur.

² Concur with clarification. The shoalest multibeam sounding depicted on the smooth sheet is -0.1 fathoms.

³ Filed with the project reports.

⁴ Concur. The data is adequate to supersede all prior surveys and miscellaneous charted data except as specifically mentioned in this report or the Hdrawing.

⁵ Filed with the project reports.

⁶ Do not concur. The Smoothsheet Sounding Distribution overlay is not found in the Descriptive Report. See the histogram for information on beam sounding selection.

⁷ Do not concur. The portion of Figure 2 showing the distribution of soundings by beam number and depth is not found in the Descriptive Report.

⁸ Strikethrough ~~this survey~~, replace with “H11236”.

⁹ Insert “with”.

¹⁰ Concur. In PHB processing, H11236 was also compared with OPR-0331-KR-02 surveys H11097 and H11098. All junction areas showed very good correlation.

¹¹ Filed with the project reports.

¹² Strikethrough ~~is~~, replace with “are”.

¹³ See Final Tide Note, attached to this report.

¹⁴ Examination by PHB personnel concluded the bias issue was satisfactorily resolved and the data is adequate for charting.

¹⁵ Filed with the project reports. For further information, see Final Tide Note attached to this report.

¹⁶ Office comparison was also made to the continuous maintenance rasters for Chart 17426, 14th Edition, Chart 17420, 27th Edition, and Chart 17436, 8th Edition.

¹⁷ Do not concur. One Danger to Navigation was submitted for the survey. See discussion on page 14 (following) and Appendix A, Dangers to Navigation, attached to this report.

¹⁸ Concur. Note that errors occurred in the depiction of contours on the smooth sheet. Contour errors have been corrected on the Hdrawing.

¹⁹ The evaluator concurs with the hydrographer’s chart comparison except as endnoted below. Note that the hydrographer’s Recommendations are advisory statements intended to show discrepancies between surveyed and charted data, and should not be used as guides for sounding selection or charting. Chart all areas with soundings and contours as shown on the smooth sheet and Hdrawing. Use smooth sheet positions, not approximate positions given in the discussions below.

²⁰ Concur.

²¹ Chart this area based on the smooth sheet.

²² Chart features according to the smooth sheet and Hdrawing except as noted.

²³ Concur. The rock is charted on 17426, 14th Edition, continuous maintenance raster as 1¼ fathoms. Chart 1 fm rock as shown on the smooth sheet.

²⁴ Concur. The rock is in an area of similar and shoaler depths and is not depicted on the Hdrawing.

-
- ²⁵ Concur. The rock has been omitted from the Hdrawing due to its proximity at scale to a charted rock.
- ²⁶ Concur. The rock is in an area of similar and shoaler depths and is not depicted on the Hdrawing.
- ²⁷ Concur with clarification. The rock is in an area of similar depths and is not depicted on the Hdrawing.
- ²⁸ Concur. The rock is in an area of similar depths and is not depicted on the Hdrawing.
- ²⁹ Concur with clarification. At 15 fathoms in an area of similar depths, the rock is not considered critical. The rock notation has been omitted from the Hdrawing.
- ³⁰ Concur. The rock is in an area of similar depths and is not depicted on the Hdrawing.
- ³¹ Concur with exception. The 2.4 fm sounding is not identified as a rock on the smooth sheet. It has been omitted from the Hdrawing due to its proximity at scale to a charted rock.
- ³² Concur with clarification. The 9.8 fm sounding is not identified as a rock on the smooth sheet. The rock is in an area of similar and shoaler depths and is not portrayed on the Hdrawing
- ³³ See endnote 22.
- ³⁴ Concur with clarification. One Danger to Navigation Report is included in Appendix A. No associated correspondence is attached. See endnote 58 for further information.
- ³⁵ Insert “sounding”.
- ³⁶ Insert “charted.”
- ³⁷ Note that the sounding discussed is southeast of the vicinity to which the arrow points. Chart according to the smooth sheet.
- ³⁸ Concur with clarification. Chart 9 fathom 3 foot sounding at smooth sheet position.
- ³⁹ Chart the following area based on the current survey.
- ⁴⁰ Concur. Update Chart 17420 MHWL with verified RSD.
- ⁴¹ Concur.
- ⁴² Concur with clarification. Not all charted features were annotated on shoreline maps. Generally, where charted features were not annotated as disproved, they were retained on the Hdrawing. Chart retained features as depicted on the Hdrawing.
- ⁴³ Charted features not shown on the RSD that were noted as PITBI’s were retained on the Hdrawing.
- ⁴⁴ Concur with clarification. The MHWL revision is shown as a dashed red line on Level 1 of the Hdrawing.
- ⁴⁵ Foul areas identified on the smooth sheet were depicted on the Hdrawing as scale permitted. Chart according to the Hdrawing.
- ⁴⁶ Note that Shoreline Verification Maps BSL-17 and BSL-19, included in the H11236 Shoreline Verification Field Notes filed with the project reports, fall within the limits of survey H11238, OPR-0331-KR-03.
- ⁴⁷ Concur. Retain area as charted and as depicted on the Hdrawing.
- ⁴⁸ Investigate features as budget and national survey priorities allow.
- ⁴⁹ The evaluator concurs with the hydrographer’s findings except as noted. Heights given in the following table are in meters. Where warranted by scale, rocks have been incorporated into ledges on the Hdrawing. Chart all features according to the smooth sheet and as portrayed on the Hdrawing except as noted.

⁵⁰ Concur with clarification. The target number notation, 1614, is not depicted on the smooth sheet. It is shown on the shoreline verification map, BSL-15.

⁵¹ Concur with clarification. The target number notation, 1615, is not depicted on the smooth sheet. It is shown on the shoreline verification map, BSL-15.

⁵² Concur with clarification. The target number notation, 1618, is not depicted on the smooth sheet. It is shown on the shoreline verification map, BSL-15.

⁵³ Concur with clarification. Target 1626 is listed in the table and on the Item Investigation report as the extents of RSD island. It is incorrectly depicted as a rock on the smooth sheet. Chart island according to the smooth sheet, with rock omitted as shown on the Hdrawing.

⁵⁴ Concur with clarification. The target number is repeated below and on the smooth sheet. This target 1680 refers to a rock at approximately Lat 55/23/52.2N, Lon 132/11/16.5W. It appears on the shoreline verification map BSL-21 as target 1680.

⁵⁵ Concur with clarification. The target number is repeated above and on the smooth sheet. This target 1680 refers to a ledge at approximately Lat 55/23/52.4N, Lon 132/11/45.7W. It appears on the shoreline verification map BSL-20 as target 1681.

⁵⁶ Concur with clarification. The target number appears on the shoreline verification map BSL-20 as target 1682.

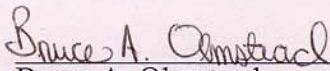
⁵⁷ Chart Aids to Navigation with the latest USCG information.

⁵⁸ Concur with clarification. Chart 9 fathom 3 foot sounding at smooth sheet position.

APPROVAL SHEET
H11236

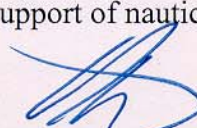
Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.


Bruce A. Olmstead
Cartographic Team
Pacific Hydrographic Branch

Date: 6/21/2006

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


Donald W. Haines
CDR, NOAA
Chief, Pacific Hydrographic Branch

Date: 22 JUNE 2006

