H11478

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. RA-10-11-05

Registry No. H11478

LOCALITY

State Alaska

General Locality Southwest Alaska Peninsula

Sublocality West Mitrofania Bay and Ivan Bay

2005

CHIEF OF PARTY

Commander Guy T. Noll, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H11478

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.
RA-10-11-05

State: Alaska

General Locality: Southwest Alaska Peninsula

Sublocality: West Mitrofania Bay and Ivan Bay

Scale: 1:10,000 Date of Survey: July 19, 2005-August 21, 2005

Instructions Dated: 6/30/2005 Project No.: OPR-P182-RA-05

Vessel: RA1 (1101), RA2 (1103), RA3 (1021), RA4 (1016), RA5 (1006), RA6 (1015)

Chief of Party: Commander Guy T. Noll, NOAA

Surveyed by: RAINIER Personnel

Soundings taken by echo sounder: RESON 8101, Reson 8125, Elac 1180, Knudsen 320M

Graphic record scaled by: N/A

Graphic record checked by: N/A

Evaluation by: K. Reser Automated plot by: HP Designjet 1050C

Verification by: K. Reser

Soundings in: Fathoms and Feet at MLLW

REMARKS: Time in UTC. UTM Projection Zone 4

Revisions and annotations appearing as endnotes were generated during office processing.

As a result, page numbering may be interrupted or non-sequential

All separates are filed with the hydrographic data.

Descriptive Report to Accompany Hydrographic Survey H11478

Project OPR-P182-RA-05
Southwest Alaska Peninsula, AK
West Mitrofania Bay and Ivan Bay
Scale 1:10,000
July- August 2005
NOAA Ship RAINIER (s221)
Chief of Party: Commander Guy T. Noll, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P182-RA-05 dated June 30, 2005 and all other applicable direction[1], with the exception of deviations noted in this report. The survey area is the western portion of Mitrofania Bay, AK including Ivan Bay and the Brothers Islands. This survey corresponds to sheet "AX" in the sheet layout provided with the Letter Instructions.

OPR-P182-RA-05 responds to requests from a U.S. Congressman, a U.S. Senator, the domestic commercial fishing industry, the United States Coast Guard, and NOAA that emphasize concern about chart adequacy and safe navigation in offshore regions of the Alaska Peninsula. The sparse hydrographic data on the charts of this area dates from 1924-1943 track line reconnaissance sonar surveys and lead-line hydrographic surveys.

One hundred percent multi-beam coverage was obtained in the survey area inshore to the 8 meter contour or until sufficient junction was obtained with the contemporary lidar surveys.[1]

The only exception to this coverage is the area near the mouth of the river emptying into the bay along Long Beach. The river carried a heavy sediment load and visibility was near zero. The low water clarity severely degraded reliable lidar coverage. Multi-beam coverage was acquired in this area in up to approximately 8- 9 m.[2] Survey launch operations further inshore were determined to be unsafe.

In depths less than 8 meters additional MBES coverage was obtained to acquire least depths over significant features or shoals, as appropriate for this survey.[3]

Limited Shoreline Verification was performed for the survey area.

Data acquisition was conducted from July 19 to August 21, 2005 (DN 200 to 233).

[1] Standing Instructions for Hydrographic Surveys (March 2004), NOS Hydrographic Surveys Specifications and Deliverables (March 2004), OCS Field Procedures Manual for Hydrographic Surveying (March 2005), and all Hydrographic Surveys Technical Directives issued through August 2005.

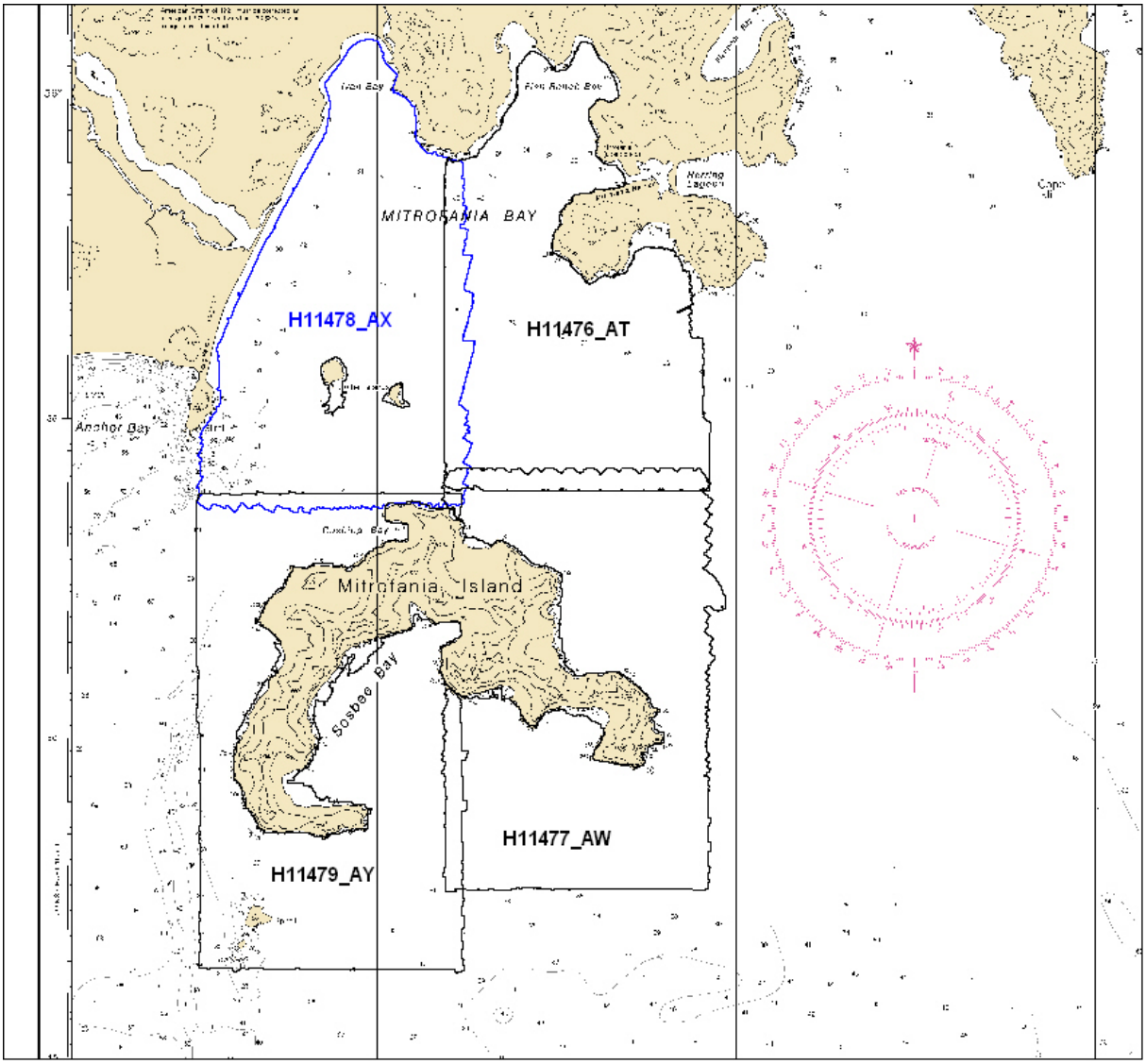


Figure 1: H11478 Survey Limits overlaid on chart 16561.

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-P182-RA-05 Data Acquisition and Processing Report* (DAPR)[4], submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

Final Approved Water Levels have been applied to this survey.[5] See Section C. for additional information.

B1. Equipment and Vessels

Data for this survey were acquired by the following vessels:

Hull Number	Name	Acquisition Type
1101 RA-1		Vertical-Beam Echosounder Side Scan Sonar Detached Positions
1103 RA-2		Vertical-Beam Echosounder Detached Positions Bottom Samples
1021	RA-3	Multi-Beam Echosounder (Reson 8101)
1016 RA-4		Multi-Beam Echosounder (Reson 8125 & Elac 1180)
1006	RA-5	Multi-Beam Echosounder (Reson 8101)
1015	RA-6	Multi-Beam Echosounder (Elac 1180)

Table 1: Data Acquisition Vessels for H11478.

Sound velocity profiles were measured with SEACAT SBE-19 and 19+ profilers in accordance with the Specifications and Deliverables.

Depths from five (5) dive investigations were acquired using both a Mod III Divers Least Depth Gauge, and an InSitu miniTROLL pressure gauge.

No unusual vessel configurations were used for data acquisition.

B2. Quality Control

Crosslines

Shallow-Water Multi-beam (SWMB) crosslines totaled 33.8 nautical miles, comprising 12.6% of SWMB hydrography. The main scheme bathymetry was manually compared to the XL nadir beams in CARIS subset mode and agreed well with differences averaging less than 1 meter in depths over 110 meters, less than 0.5 meters in depths between 40 and 110 meters, and less than 0.3 meters in depths less than 40 meters.[6]

A statistical Quality Control Report has been conducted on representative data collected with each system used on this survey and is included in the *OPRP182-RA-05 DAPR*.

Junctions

The following contemporary surveys junction with H11478.[7] (See Figure 1):

Registry #	Scale	Date	Junction side
H11476	1:10,000	2005	East
H11479	1:10,000	2005	South
H11477	1:10,000	2005	Southeast
H11262	1:10,000	2004	Northeast (lidar)
H11263	1:10,000	2004	West and Shoal Areas (lidar)
H11265	1:10,000	2004	South and Shoal Areas (lidar)

Survey H11478 junctions well with these surveys. The data from this survey was compared to contemporary sonar surveys using the CARIS subset tool. Initial review of the lidar survey junction was also performed with the subset tool. Final comparison of the lidar surveys with this survey was done by comparing the lidar Smooth Sheets with the final sounding set in MapInfo (the sounding set was created using the Mapinfo "draw Preliminary Smooth Sheet" MapBasic application from the final combined surface imported into Pydro). A cursory comparison indicates differences between H11478 and the contemporary surveys are generally less than 0.5m.[8] Over many kelp covered rocks, the depths acquired by this survey were significantly deeper than the lidar surveys. This is likely due to lidar returns off the submerged vegetation or bubbles entrained in the water column from breaking swell.[9] These instances are discussed in greater detail in the Survey Feature Report found in Appendix I.[10]

The hydrographer recommends that H11478 bathymetry supersede all lidar data in the common area.[11]

Data Quality Factors

Sound Velocity

Near the mouth of the river mouth along Long Beach there were some instances of sound velocity errors caused by the inhomogeneous mixing of the fresh water outflow of the river. Where possible, outer beams were filtered to limit the effect of the sound velocity errors. The residual error after filtering is estimated to be less than 0.5m.[12]

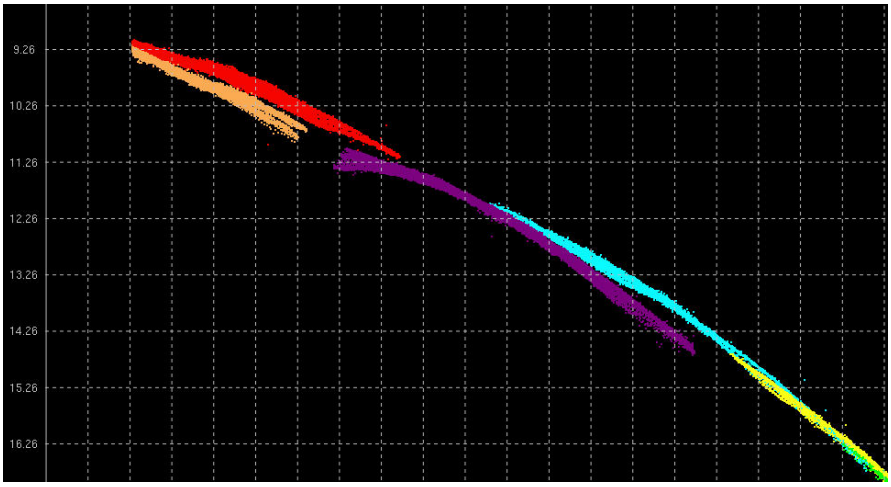


Figure 2: Example of sound velocity errors near the river mouth along Long Beach. Red: 1021_8101, Dn221, 040_2005; Purple, 1016_8125, Dn215, 051_2217, Tan: 1016_8125, Dn215, 050_2247.

Induced Heave

There is a conspicuous heave artifact northwest of West Brother Island. Heave was induced by a sharp maneuver of launch 1016 on DN220. The data is required for coverage, and has not been edited. The maximum apparent vertical deflection is approximately 2m.[13]

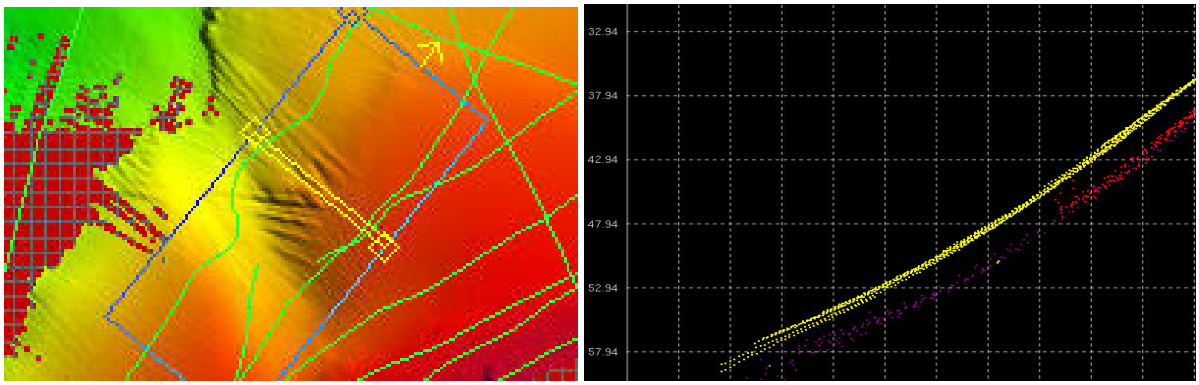


Figure 3:. Induced heave artifact. Yellow: 1016_8125, Dn220, 043_2221; Purple: 1016_8125, Dn220, 042_2225, Red: 1016_8125, Dn220, 126_2229.

Coverage

There are a few small holidays in 100% multi-beam coverage along Long Beach. Most of these are adequately covered with lidar data. Near the river mouth, however, there was no lidar coverage due to low water clarity. Where possible, outer beams have been re-accepted The largest of these holidays is approximately 9x60 meters. There is no indication of shoaling within these holidays.[14]

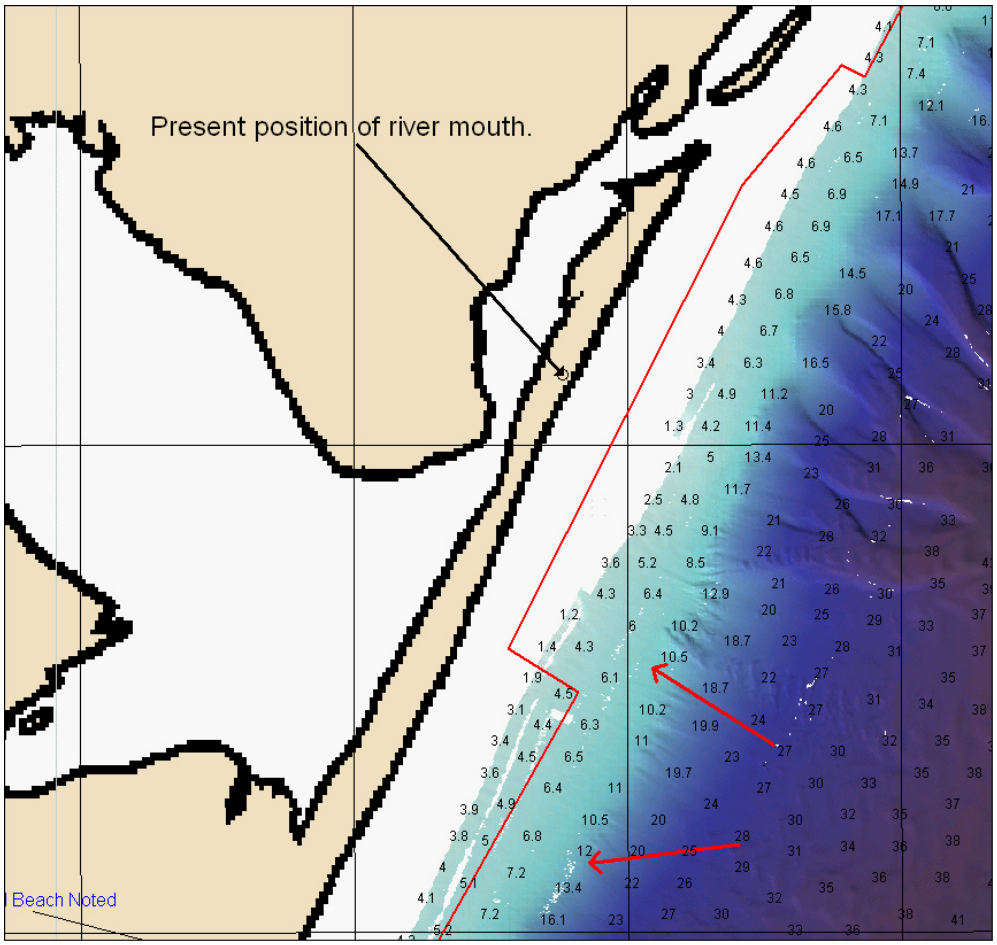


Figure 4:. Holidays near river mouth. 0.5m, 1m, 2m,& 5m finalized BASE surfaces overlaid on chart 16651. The red line indicates the offshore limit of lidar coverage. Soundings are in fathoms. The red arrows indicate holidays not covered by lidar.

In addition, data acquired with the Elac system in deeper water was sparse. The data will not support BASE surfaces at the resolution called for in the Field Procedures Manual. To compensate, data at depths greater than 115m has been presented at a coarser resolution. This is discussed further in section B4, Data Representation. There are still, however, some point holidays in the 5 meter finalized surface at depths over 95 meters. All significant features are well represented in the BASE surface despite these gaps.[15]

B3. Data Reduction

Data reduction procedures for survey H11478 conform to those detailed in the *OPR-P182-RA-05 DAPR.*[16]

B4. Data Representation

Though many BASE surfaces were used for the processing of H11478, the final submission is shown in Figures 9 and 10. The submission field sheets have fewer than $25x10^6$ nodes.

Because of the low density of soundings acquired by the Elac multi-beam in deeper water, data from 115 m and deeper is presented in a 10m BASE surface. The standard guidelines in the Field Procedures Manual call for a 5 m surface to be used in depths from 59-150 m. There are no significant features in the survey area deeper than 115m that are not well represented by the 10 m surface.

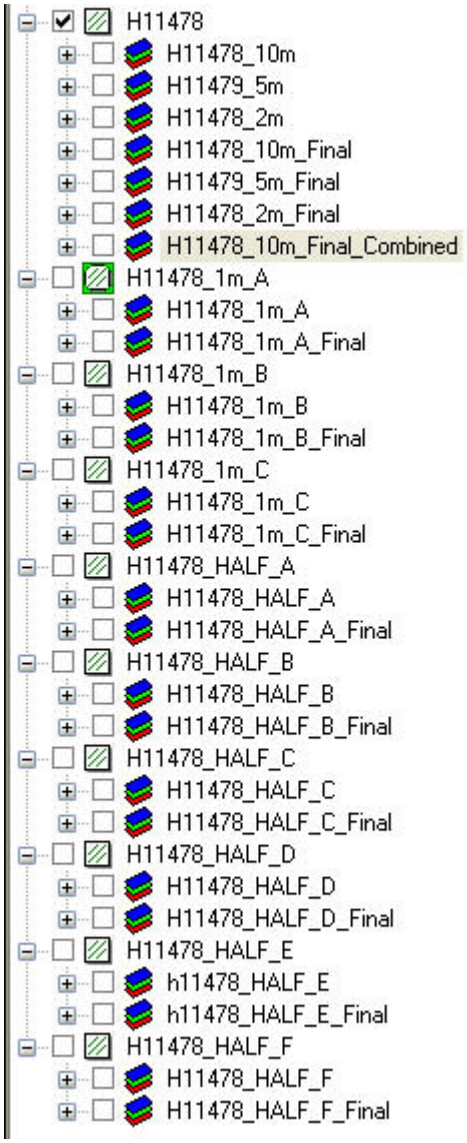
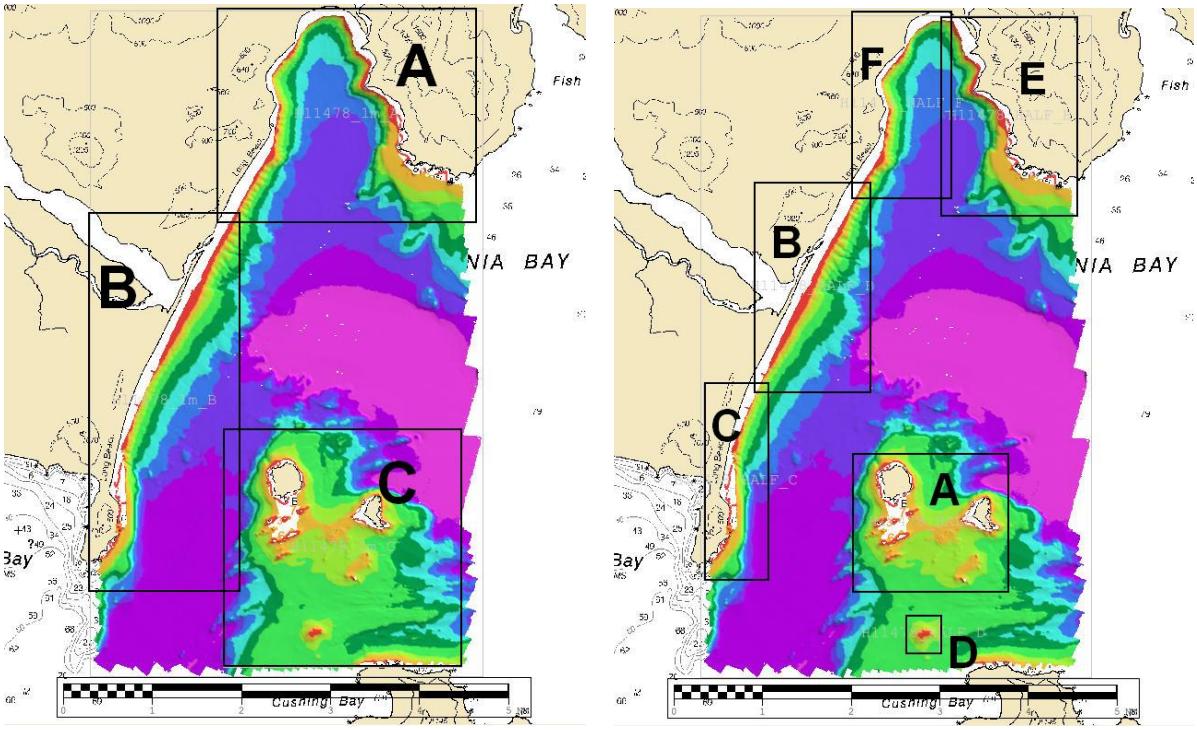


Figure 5: Field sheets and BASE surfaces submitted with H11478.



One meter field-sheets *Half meter field-sheets*

Figure 6: Layout of field sheet and BASE surfaces for H11478, overlaid on NOAA Chart 16561. The ten, five, and two meter BASE surface are in a fieldsheet that covers the entire sheet.

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11478 can be found in the *OPR-P182-RA-05 Horizontal and Vertical Control Report*,[17] submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The differential corrector beacons utilized for this survey are given in Table 2. RAINIER personnel established a temporary differential beacon on Mitrofania Island as a backup to USCG-generated correctors. This beacon was utilized when the USCG beacons could not be received due to atmospheric effects, and is described in detail in the *OPR-P182-RA-05 Horizontal and Vertical Control Report*. Changes in the corrector source were noted in the data acquisition logs.

Location	Frequency	Custodian	Distance	Priority
Cold Bay	289 kHz	USCG	135nm	Primary
Kodiak 313	kHz	USCG	245nm	Secondary
Mitrofania Island	NOAA F4	NOAA ("flyaway")	0nm	Backup

Table 2: Differential Corrector Sources for H11478.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Sand Point, AK (945-9450) served as control for datum determination and as the primary source for water level reducers for survey H11478.

RAINIER personnel installed Sutron 8210 "bubbler" tide gauge at the following subordinate station in accordance with the Letter Instructions. This station is described in detail in the *OPR-P182-RA-05 Horizontal and Vertical Control Report*.

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Mitrofania Island	945-9016	30-day	7/19/2005	8/22/2005

Table 3: Tide Stations installed by RAINIER personnel for H11478

All data were reduced to MLLW using **Final Approved Water Levels** from station Mitrofania Island, AK (945-9016) and station Sand Point, Popof Island, AK (945-9450) using the tide files 9459016.tid and 9469450.tid. The final time and height correctors were applied to the data using the zone corrector file H11478CORF.zdf.[18]

The request for Final Approved Water Levels for H11478 was submitted to CO-OPS on September 7, 2005 and the Final Tide Note was received on January 10, 2006. This documentation is included in Appendix III.[19]

D. RESULTS AND RECOMMENDATIONS

D.1. Chart Comparison

D.1.a. Survey Agreement with Chart

Survey H11478 was compared with the following charts:

Chart	Scale	Edition and Date	Latest Notice to Mariners Applied
16556[20]	1:80,000	4th Ed. November 2002	8/2003
16561[21]	1:80,000	2nd Ed. March 2005	26/2005

Table 4: Charts compared with H11478

The current hydrographic data on the charts of the survey area are from a limited number of track line and reconnaissance surveys. The charted soundings are very sparse. In the few locations where chart 16561 has soundings, this survey found comparable (within 2 fathoms) or significantly deeper depths.

The river mouth into the bay along Long Beach was found to be in a different position (about ½ nm south) than the charted and DCFF information. There is ample evidence from the shoreline and bottom characteristics that this river mouth periodically meanders along two nautical miles of low shoreline. The hydrographer recommends charting the river using the CFF data, and adding the following note to chart 16561: "Survey data has shown that this river mouth periodically meanders along Long Beach. The position shown on this chart reflects the survey data from 1999."[22]

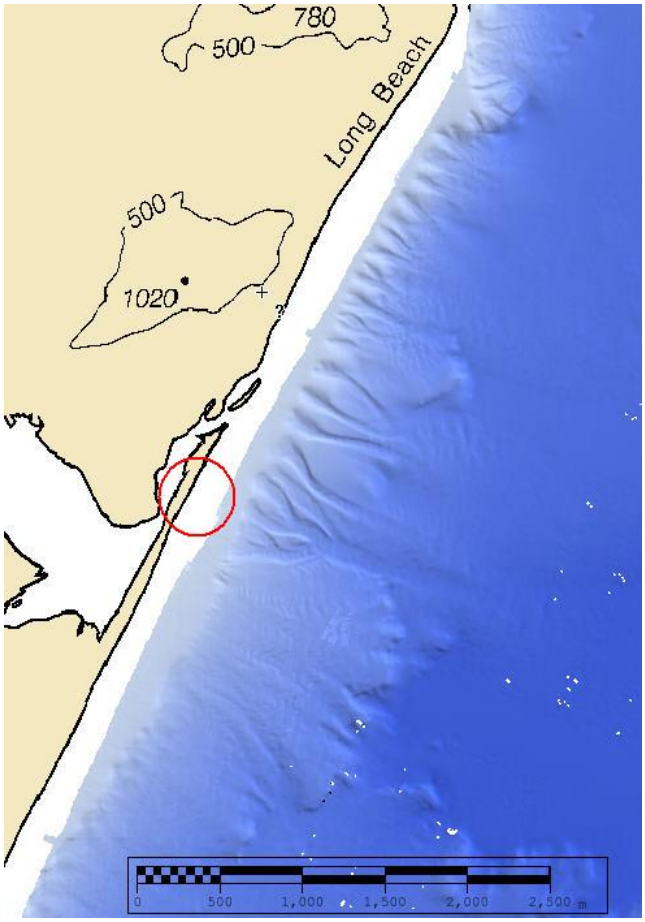


Figure 7: River mouth along Long Beach. BASE surface overlaid on chart 16561. The current location of the mouth is shown by the red circle. The braided channels along the seafloor show that the river mouth has periodically wandered along the beach.

The hydrographer recommends that survey soundings supersede all charted depths in the common area.[23]

D.1.b. Dangers to Navigation

No dangers to navigation (DTONs) were found in survey H11478.[24]

D.1.c. Other Features

Automated Wreck and Obstruction Information System (AWOIS) Investigations
One (1) AWOIS item falls within the limits of H11478. This item was assigned for full investigation. A descriptions of the investigation and results is included in the Survey Feature Report in Appendix I.[25]

Additional Items

Additional features investigated within the limits of H11478 are described in the Survey Feature Report in Appendix I.[26]

D.2. Additional Results

D.2.a. Prior Survey Comparison

Prior survey comparison with H11478 was not performed.

D.2.b. Shoreline Verification

Shoreline Source

Vector photogrammetric projects AK0403 and AK0209 were supplied by N/NGS3 in the form of cartographic feature file GC-10571 and GC-10527(CFF). RAINIER conducted limited shoreline verification of the CFF. In addition, limited bathymetry and feature information was also supplied from lidar surveys H11262, H11263, and H11265. Features shown on the current edition of chart 16651 that were not depicted in the shoreline source data were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline Verification

RAINIER conducted limited shoreline verification of the CFF, and addressed all of the lidar features flagged for further investigation by N/CS34. These operatations were conducted near predicted low water in accordance with the Standing Project Instructions and FPM sections 6.1 and 6.2. Detached positions (DPs) taken during shoreline verification were recorded in HYPACK, on DP forms, and processed in Pydro. These indicate revisions to features and features not found on the verified shoreline. In addition, annotations describing shoreline were recorded on hard copy plots of digital shoreline. DP forms are included in the *Separates to be Included with Survey Data.*[27]

A detailed feature plot in MapInfo format is provided showing all detached positions and bottom samples with notes relating to each feature. Verified CFF shoreline that did not require revision is in MapInfo table H11478_Shoreline and shown in black. Charted shoreline, when used for reference purposes or when source data were not available, is depicted in the MapInfo table "H11478_CHD_Shoreline" and displayed in brown. Changes to low water shoreline, CFF or charted, are displayed in pink in the "H11478_Shoreline_Updates" MapInfo table. CFF features are depicted in black and are found in the MapInfo table "H11478_CFF_RKS." Charted features, when used for reference purposes or when source data were not available, are depicted in brown and are found in the MapInfo table "H11478_CHD_RKS." Features that have been verified with a DP or

designated sounding are depicted in black and are found in the MapInfo table H11478_PSSFEATURES.

Remote sensing division classifies rocks in the CFF as either rocks or bare rocks. This distinction was preserved on the boat sheet used for shoreline verification. In general, bare rocks were found to be larger than rocks, but not high enough to be categorized as islets. Where heights of these features have not been recorded in the field, the hydrographer recommends categorizing both CFF rocks and CFF bare rocks as rocks which cover and uncover (S-57 object UWTROC, WATLEV 4, covers and uncovers).

Poorly defined features from the junction lidar surveys were assigned for additional investigation. With the exception of a few far inshore features that were impractical to approach, all assigned lidar investigation items were investigated. Many of these features were kelp covered submerged rocks. These lidar investigation items were initially investigated with singlebeam, detached positions taken if possible, and if the least depth permitted, developed with 100% multi-beam. In five (5) cases the features were additionally investigated by divers. The lidar features, detached positions, designated soundings from bathymetry, and least depths from dive investigations have been imported into Pydro and are included in the Survey Feature Report in Appendix I. Lidar investigation items that were found not to exist, or are well represented in the bathymetry and are not cartographically significant have not been included on the MapInfo feature plot.

Many of the investigation items are in the region south of the Brother Islands. This area has a generally rocky seafloor and is littered with shoals.

Source Shoreline Changes and New Features

Items for survey H11478 that require further discussion and are associated with a detached position have been flagged "Report" in Pydro in H11478.pss. Investigation methods and recommendations are listed in the Remarks and Recommendation tabs. These features are included in the Survey Feature Report in Appendix I.[28]

Recommendations

The Hydrographer recommends that the shoreline as depicted on the Detached Position and Bottom Sample supersede and complement shoreline information compiled on the CFF, lidar junction surveys, and charts as noted.[29] In addition, field notes made by the Hydrographer, including verification of source features or charted features if no source shoreline was available are submitted in the digital MapInfo file "H11478_ShorelineNotes."

D.2.c. Aids to Navigation

There are no Aids to Navigation within the limits of H11478.[30]

D.2.d. Overhead features

There are no overhead features in survey H11478.[31]

D.2.e. Submarine Cables and Pipelines

There are no submarine cables or pipelines in survey H11478.[32]

D.2.f. Ferry Routes

There are no ferry routes on H11478.[33]

D.2.g. Bottom Samples

Nine (9) bottom samples were collected during survey H11478.[34] There is one charted bottom sample in the survey area.[35] None of the bottom samples collected during this survey are in a comparable area with this charted sample. For addition information on bottom samples, refer to Appendix I, Survey Feature Report

D.2.h Other Findings

Survey H11478 had no additional findings of note.[36]

E. ADDITIONAL DOCUMENTATION

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR-P182-RA-05	1 Sept. 2006	N/CS34
Horizontal and Vertical Control Report for OPR- P182-RA-05	16 June 2006	N/CS34
Tides and Water Levels Package for OPR-P182-RA-05	26 August 2005	N/OPS1
Coast Pilot Report for OPR-P182-RA-05	10 May 2006	N/CS26

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
NOAA Ship RAINIER (S221)
1801 Fairview Ave E, Seattle, WA 98102

August 31, 2006

MEMORANDUM FOR: CDR Donald W. Haines, NOAA
Chief, Pacific Hydrographic Branch

FROM: CDR Guy T. Noll, NOAA
Commanding Officer

SUBJECT: Approval of Hydrographic Survey H11478

Field operations for hydrographic survey H11478 were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports. The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. All data and reports are respectfully submitted to N/CS34, Pacific Hydrographic Branch.

In addition, the following individuals were responsible for oversight of acquisition and processing of this survey:

Survey Sheet Manager: _____
Samuel F. Greenaway
Ensign, NOAA

Tides Officer: _____
for Nicola Samuelson
Ensign, NOAA

Horizontal Control Officer: _____
for Andrew Halbach
Ensign, NOAA

Chief Survey Technician: _____
for James B. Jacobson
Chief Survey Technician, NOAA Ship RAINIER

Field Operations Officer: _____
Benjamin K. Evans
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

[1] Concur.
[2] Concur.
[3] Concur with clarification. VBES data was also collected.
[4] Filed with project records.
[5] Concur.
[6] Concur.
[7] Concur with clarification. H11478 also junctions with a small portion of LIDAR survey H11264 in the southeast section of the sheet.
[8] Concur.
[9] Concur.
[10] See attached Feature Report.
[11] Concur with clarification. Data from H11478 will supersede LIDAR data in the common area except in the instance of a shoaler LIDAR sounding coincident with a deeper multibeam sounding.
[12] Concur. These data meet specification despite evidence of SV errors.
[13] No soundings were selected for the HCell where the induced heave error affects the BASE surface.
[14] Concur.
[15] Concur.
[16] Concur.
[17] Filed with project records.
[18] Concur.
[19] See attached Tide Note dated January 10, 2006.
[20] The version of chart 16556 used during compilation was the 5th Ed., April 2006, NM 2/14/2009.
[21] The version of chart 16561 used during compilation was the 3rd Ed., March 2007, NM 2/7/2009.
[22] Concur. Recommendation to add note is depicted as a Blue Note in HCell H11478.
[23] Concur with clarification. These data are adequate to supersede charted data in the common area with the exception of the area where an induced heave error affects the BASE surface. See endnote 13.
[24] Concur with clarification. No DTONs were reported from survey H11478. Six DTONs were reported from LIDAR survey H11263 and one from LIDAR survey H11265 (see attached DTON Reports). Some depths and positions of the reported DTONs may have been modified based on field verification (see section 5 in attached HCell Report). All DTONs were investigated and are included in HCell H11478.
[25] See attached Feature Report.
[26] See attached Feature Report.
[27] Filed with hydrographic records.
[28] See attached Feature Report.
[29] Concur with clarification. Due to spacing concerns while compiling the HCell, some of the features may not be included or were modified, contradicting the hydrographer's recommendations. Full detail on such features are included in the Office Notes in the attached Feature Report.
[30] Concur.
[31] Concur.
[32] Concur.
[33] Concur.
[34] All bottom samples collected during survey H11478 are included in the HCell.
[35] The one charted bottom sample is included in HCell H11478 to be retained.
[36] Concur.

Danger to Navigation Report

Hydrographic Survey Registry Number: **H11263**

Survey Title: State: Alaska Locality: Southwest Alaska Peninsula Sub-locality: Mitrofania Island

Project Number: OPR-P182-KRL-04

Survey Dates: May - July 2004

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

CHARTS AFFECTED:

Chart	Scale	Edition	Date
16561	1:80,000	1st	01/20/01

DANGERS:

Feature	Depth(ft or fms)	Latitude (N)	Longitude (W)
Rock	0 fms, awash	55° 54 37.1"	158° 49' 51.4"

COMMENTS:
Feature was detected with LIDAR.

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at *(206) 526-6840.*

H11263 Dton Report

Registry Number: H11263

State: AK

Locality: Southwest Alaska Peninsula

Sub-locality: Ivan Bay to Brother Islands

Project Number: OPR-P182-KRL-04

Survey Dates: 07/05/4 - 08/31/4

Charts Affected

Number	Version	Date	Scale
16561	1st Ed.	01/20/2001	1:80000
16013	29th Ed.	11/01/2003	1:969761
16011	36th Ed.	08/01/2004	1:1023188
16006	33rd Ed.	12/23/2000	1:1534076
500	8th Ed.	06/01/2003	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Rock	-0.18 m	055° 55' 23.604" N	158° 50' 54.193" W	---
1.2	Rock	0.73 m	055° 55' 03.921" N	158° 51' 26.393" W	---
1.3	Rock	4.39 m	055° 54' 54.401" N	158° 51' 14.334" W	---
1.4	Rock	-0.73 m	055° 55' 08.498" N	158° 51' 06.281" W	---
1.5	Rock	4.02 m	055° 54' 53.333" N	158° 49' 35.913" W	---

1 - Danger To Navigation

1.1) GP No. - 1 from H11263_Dtons_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 55' 23.604" N, 158° 50' 54.193" W

Least Depth: -0.18 m

Timestamp: 04-244.00:24:13.990 (08/31/0004)

GP Dataset: H11263_Dtons_from_LADS.xls

GP No.: 1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Further investigation recommended

Hydrographer Recommendations

These features were detected by lidar using 4 x 4 laser spot spacing in the vicinity of the Brother Islands. The presence of kelp at all locations has resulted in uncertain least depths. Further investigation by boat is recommended for all DTON features tabulated above.

S-57 Data

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

Attributes: INFORM - Further investigation recommended

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - -0.18288 m

VERDAT - 12:Mean lower low water

WATLEV - 4:covers and uncovers

1.2) GP No. - 2 from H11263_Dtons_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 55' 03.921" N, 158° 51' 26.393" W

Least Depth: 0.73 m

Timestamp: 04-187.03:04:57.990 (07/05/0004)

GP Dataset: H11263_Dtons_from_LADS.xls

GP No.: 2

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Further investigation recommended

Hydrographer Recommendations

These features were detected by lidar using 4 x 4 laser spot spacing in the vicinity of the Brother Islands. The presence of kelp at all locations has resulted in uncertain least depths. Further investigation by boat is recommended for all DTON features tabulated above.

S-57 Data

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

Attributes: INFORM - Further investigation recommended

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - 0.73152 m

VERDAT - 12:Mean lower low water

WATLEV - 4:covers and uncovers

1.3) GP No. - 3 from H11263_Dtons_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 54' 54.401" N, 158° 51' 14.334" W

Least Depth: 4.39 m

Timestamp: 04-187.03:15:39.990 (07/05/0004)

GP Dataset: H11263_Dtons_from_LADS.xls

GP No.: 3

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Further investigation recommended

Hydrographer Recommendations

These features were detected by lidar using 4 x 4 laser spot spacing in the vicinity of the Brother Islands. The presence of kelp at all locations has resulted in uncertain least depths. Further investigation by boat is recommended for all DTON features tabulated above.

S-57 Data

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

Attributes: INFORM - Further investigation recommended

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - 4.38912 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

1.4) GP No. - 4 from H11263_Dtons_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 55' 08.498" N, 158° 51' 06.281" W

Least Depth: -0.73 m

Timestamp: 04-219.09:52:33.990 (08/06/0004)

GP Dataset: H11263_Dtons_from_LADS.xls

GP No.: 4

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Further investigation recommended

Hydrographer Recommendations

These features were detected by lidar using 4 x 4 laser spot spacing in the vicinity of the Brother Islands. The presence of kelp at all locations has resulted in uncertain least depths. Further investigation by boat is recommended for all DTON features tabulated above.

S-57 Data

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

Attributes: INFORM - Further investigation recommended

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - -0.73152 m

VERDAT - 12:Mean lower low water

WATLEV - 4:covers and uncovers

1.5) GP No. - 5 from H11263_Dtons_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 54' 53.333" N, 158° 49' 35.913" W

Least Depth: 4.02 m

Timestamp: 04-187.03:25:13.990 (07/05/0004)

GP Dataset: H11263_Dtons_from_LADS.xls

GP No.: 5

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Further investigation recommended

Hydrographer Recommendations

These features were detected by lidar using 4 x 4 laser spot spacing in the vicinity of the Brother Islands. The presence of kelp at all locations has resulted in uncertain least depths. Further investigation by boat is recommended for all DTON features tabulated above.

S-57 Data

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

Attributes: INFORM - Further investigation recommended

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - 4.02336 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

H11265 DTON Report

Registry Number: H11265

State: Alaska

Locality: Southwest Alaska Peninsula

Sub-locality: Western Portion of Mitrofania Island

Project Number: OPR-P182-KRL-04

Survey Date: 07/05/4

Charts Affected

Number	Version	Date	Scale
16561	1st Ed.	01/20/2001	1:80000
16013	29th Ed.	11/01/2003	1:969761
16011	36th Ed.	08/01/2004	1:1023188
16006	33rd Ed.	12/23/2000	1:1534076
500	8th Ed.	06/01/2003	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
1.1	Rock	0.18 m	055° 54' 02.040" N	158° 50' 40.320" W

Generated by Pydro v5.3.2 on Fri Apr 15 19:07:09 2005 [UTC]

1 - Danger To Navigation

1.1) GP No. - 1 from H11265_Dton_from_LADS.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 055° 54' 02.040" N, 158° 50' 40.320" W

Least Depth: 0.18 m

Timestamp: 04-187.00:49:10.880 (07/05/0004)

GP Dataset: H11265_Dton_from_LADS.xls

GP No.: 1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

This feature was detected by lidar and examined using a 3 meter spot spacing, it has been listed for further investigation by boat as it is believed that derived depth is in fact kelp on the rock. This feature lies 0.2Nm north east of a charted 4 fathoms.

Hydrographer Recommendations

S-57 Data

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

Attributes: INFORM - This feature was detected by lidar and examined using a 3 meter spot spacing, it has been listed for further investigation by boat as it is believed that derived depth is in fact kelp on the rock. This feature lies 0.2Nm north east of a charted 4 fathoms.

QUASOU - 9:value reported (not confirmed)

STATUS - 1:permanent

TECSOU - 7:found by laser

VALSOU - 0.18288 m

WATLEV - 4:covers and uncovers

H11478 Feature Report

Registry Number: H11478

State: Alaska

Locality: Southwest Alaska Peninsula

Sub-locality: West Mitrofania Bay and Ivan Bay

Project Number: OPR-P182-RA-05

Survey Dates: 01/01/1990 - 08/19/2005

Charts Affected

Number	Version	Date	Scale
16556	4th Ed.	11/01/2002	1:80000
16561	2nd Ed.	03/01/2005	1:80000
16013	29th Ed.	11/01/2003	1:969761
16011	36th Ed.	08/01/2004	1:1023188
16006	33rd Ed.	12/23/2000	1:1534076
500	8th Ed.	06/01/2003	1:3500000
530	31st Ed.	06/01/2005	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Rock	-0.21 m	055° 55' 12.913" N	158° 49' 13.341" W	---
1.2	Sounding	-0.46 m	055° 55' 18.194" N	158° 49' 42.125" W	---
1.3	Rock	-0.47 m	055° 55' 21.721" N	158° 50' 57.103" W	---
1.4	Sounding	-0.19 m	055° 58' 04.210" N	158° 53' 06.849" W	---
1.5	Sounding	0.05 m	055° 59' 10.167" N	158° 48' 36.446" W	---
1.6	Sounding	2.15 m	055° 55' 39.107" N	158° 51' 32.521" W	---
1.7	Rock	-1.81 m	055° 55' 55.705" N	158° 51' 05.919" W	---
1.8	Rock	-1.22 m	055° 55' 56.366" N	158° 51' 14.122" W	---
1.9	Rock	-0.36 m	055° 55' 29.671" N	158° 51' 20.140" W	---
1.10	Rock	-0.20 m	055° 54' 59.804" N	158° 54' 43.684" W	---
1.11	Sounding	-2.29 m	055° 55' 09.367" N	158° 54' 31.447" W	---

1.12	Rock	4.47 m	055° 55' 25.588" N	158° 50' 47.797" W	---
1.13	Rock	6.17 m	055° 55' 11.364" N	158° 54' 28.312" W	---
1.14	Rock	-0.68 m	055° 55' 16.867" N	158° 54' 32.090" W	---
1.15	Rock	-0.68 m	055° 59' 42.843" N	158° 48' 52.268" W	---
1.16	Rock	-1.93 m	055° 54' 37.001" N	158° 49' 51.553" W	---
1.17	GP	4.17 m	055° 54' 53.333" N	158° 49' 35.914" W	---
1.18	GP	15.80 m	055° 55' 06.191" N	158° 50' 19.805" W	---
1.19	Rock	4.19 m	055° 55' 19.400" N	158° 49' 53.560" W	---
1.20	GP	2.22 m	055° 55' 13.091" N	158° 49' 09.862" W	---
1.21	GP	4.96 m	055° 54' 54.401" N	158° 51' 14.334" W	---
1.22	Rock	-1.00 m	055° 55' 08.498" N	158° 51' 06.281" W	---
1.23	GP	2.61 m	055° 55' 09.443" N	158° 51' 42.844" W	---
1.24	Rock	5.92 m	055° 55' 18.730" N	158° 51' 16.226" W	---
1.25	GP	-0.17 m	055° 55' 23.604" N	158° 50' 54.193" W	---
1.26	GP	17.02 m	055° 55' 09.603" N	158° 50' 13.682" W	---
1.27	Rock	6.11 m	055° 55' 03.706" N	158° 51' 15.814" W	---
1.28	Rock	-0.37 m	055° 55' 45.657" N	158° 51' 35.634" W	---
1.29	Rock	5.15 m	055° 55' 31.264" N	158° 54' 34.508" W	---
1.30	GP	[None]	055° 55' 41.704" N	158° 51' 36.499" W	---
1.31	GP	[None]	055° 55' 22.802" N	158° 50' 59.468" W	---
1.32	GP	[None]	055° 55' 05.321" N	158° 51' 14.223" W	---
1.33	GP	[None]	055° 55' 03.462" N	158° 51' 28.918" W	---
1.34	Rock	1.03 m	055° 59' 11.044" N	158° 48' 33.276" W	---
1.35	Rock	0.26 m	055° 59' 09.103" N	158° 48' 20.612" W	---
1.36	Rock	2.15 m	055° 54' 51.744" N	158° 51' 22.685" W	---
1.37	Shoal	7.24 m	055° 54' 52.666" N	158° 51' 20.308" W	---
1.38	Rock	3.60 m	055° 54' 53.441" N	158° 51' 18.378" W	---
1.39	Sounding	2.13 m	055° 55' 11.018" N	158° 54' 30.326" W	---
1.40	Rock	13.20 m	055° 55' 10.872" N	158° 50' 08.383" W	---
1.41	Rock	6.27 m	055° 55' 19.460" N	158° 51' 25.704" W	---
1.42	Rock	9.75 m	055° 55' 10.700" N	158° 51' 30.930" W	---
2.1	Obstruction	5.08 m	055° 54' 01.500" N	158° 50' 40.038" W	53284

1 - New Features

1.1) Profile/Beam - 4/1 from h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Survey Summary

Survey Position: 055° 55' 12.913" N, 158° 49' 13.341" W

Least Depth: -0.21 m

Timestamp: 2005-213.16:08:28.000 (08/01/2005)

DP Dataset: h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Profile/Beam: 4/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New Rk

QUA: GPSmode=2, SVs=7, HDOP=1.00

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	4/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk

Cartographically-Rounded Depth (Affected Charts):

0fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.2m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New rock

VALSOU - -0.214 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

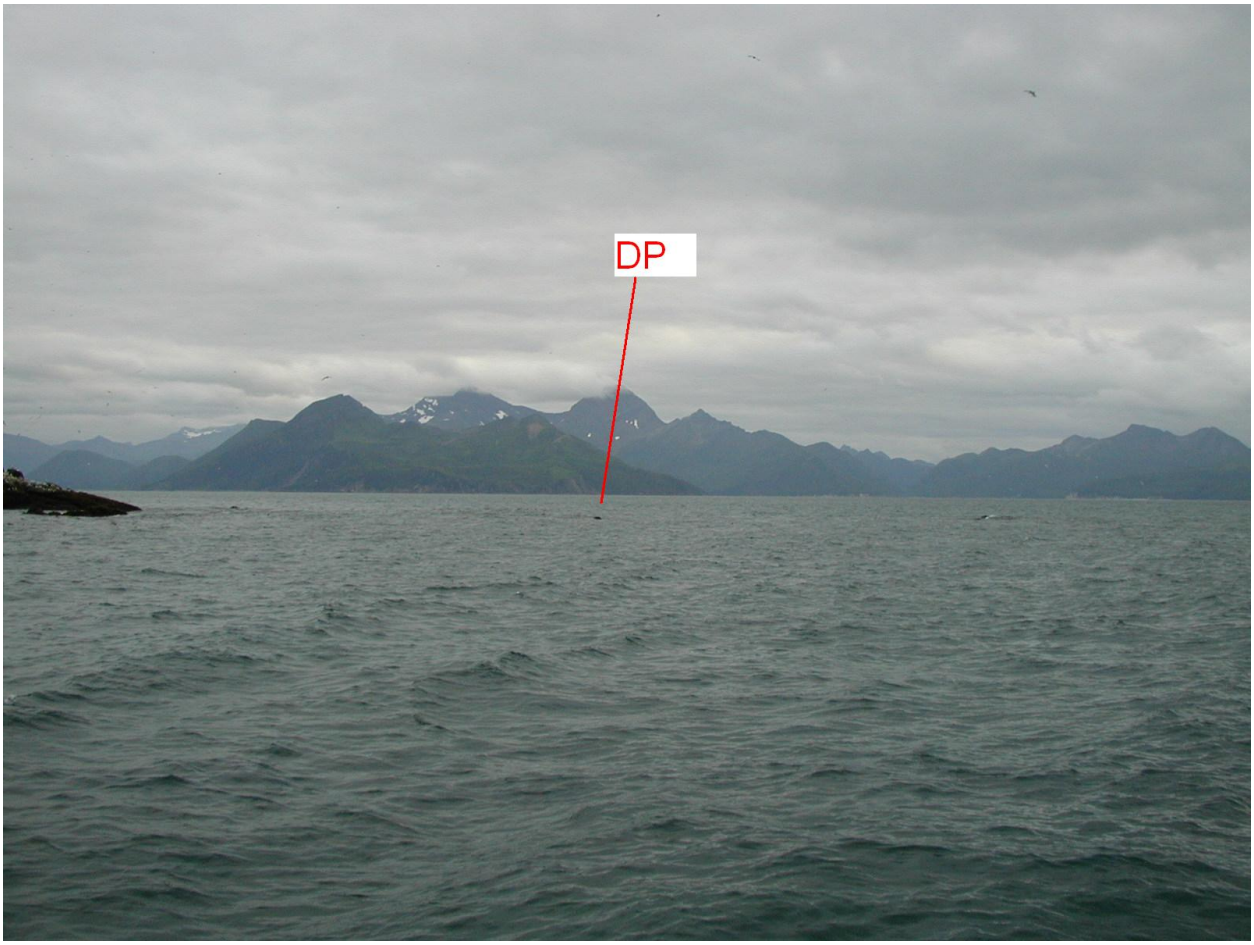


Figure 1.1.1

1.2) Profile/Beam - 5/1 from h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Survey Summary

Survey Position: 055° 55' 18.194" N, 158° 49' 42.125" W

Least Depth: -0.46 m

Timestamp: 2005-213.16:27:05.000 (08/01/2005)

DP Dataset: h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Profile/Beam: 5/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New Rk

QUA: GPSmode=2, SVs=6, HDOP=1.30

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	5/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.5m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New rock

VALSOU - -0.459 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

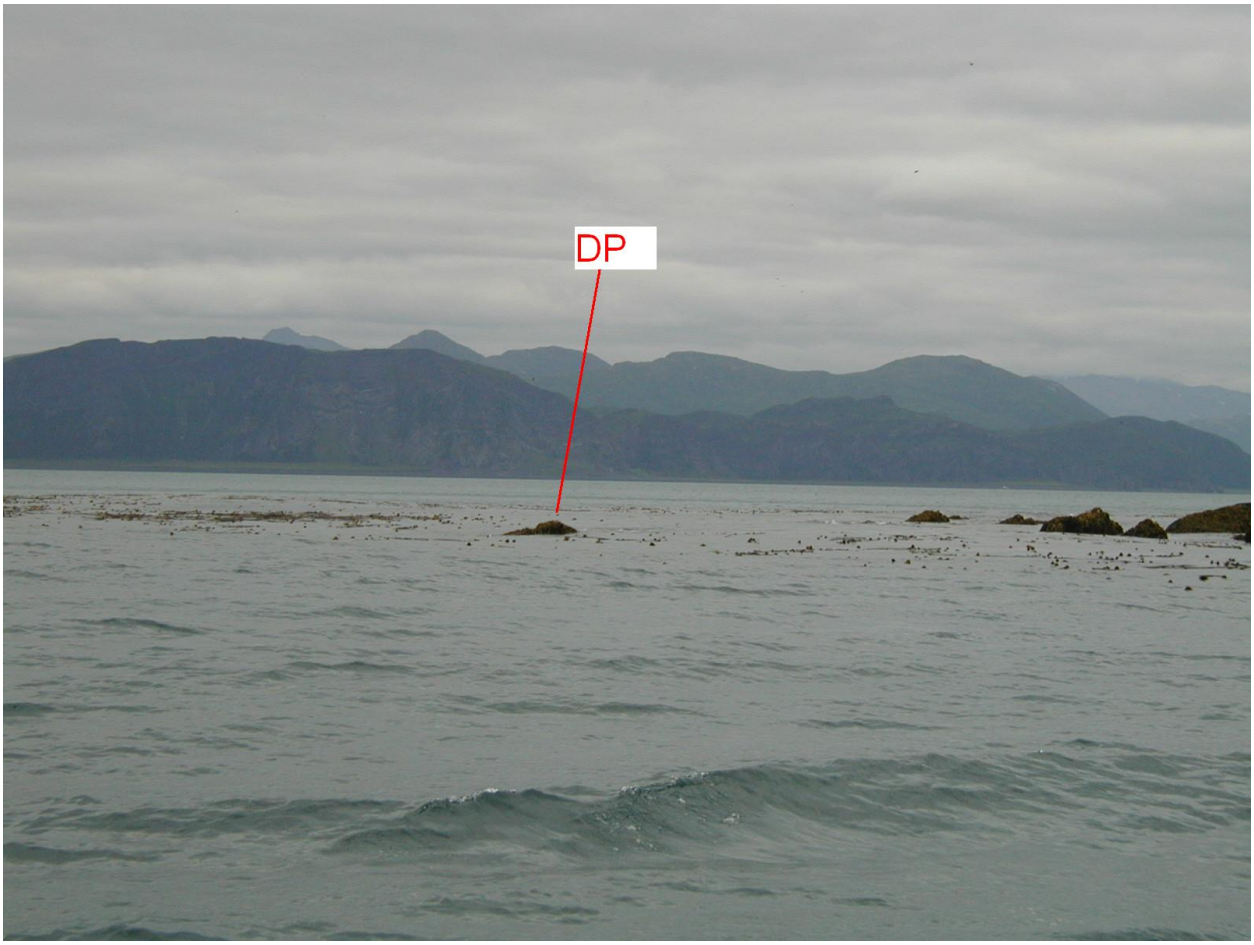


Figure 1.2.1

1.3) Profile/Beam - 6/1 from h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Survey Summary

Survey Position: 055° 55' 21.721" N, 158° 50' 57.103" W

Least Depth: -0.47 m

Timestamp: 2005-213.16:52:40.000 (08/01/2005)

DP Dataset: h11478 / 1101_nonechosounder_dp / 2005-213 / dp_1101_213

Profile/Beam: 6/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New rock

QUA: GPSmode=2, SVs=7, HDOP=1.00

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	6/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.5m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New rock

VALSOU - -0.470 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

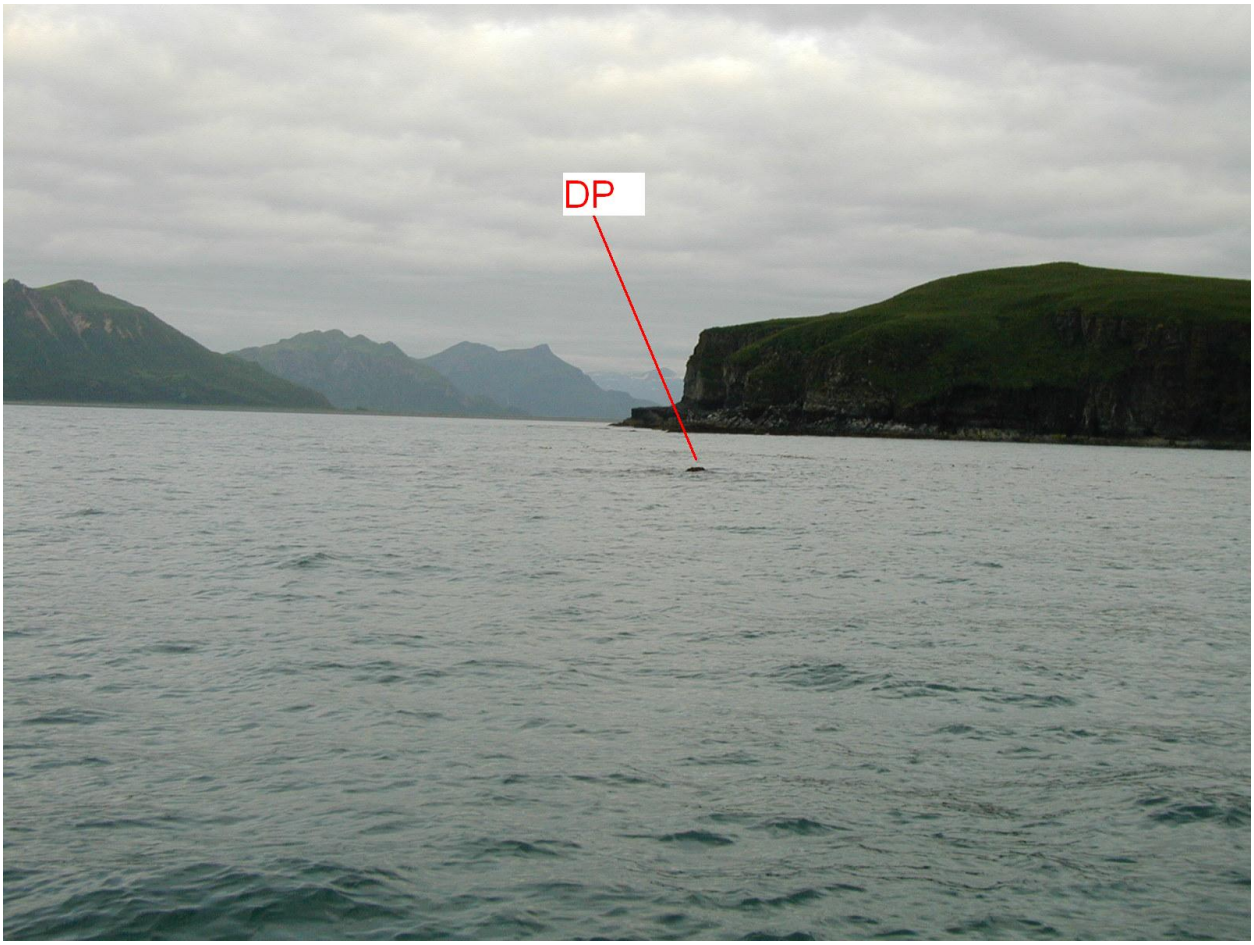


Figure 1.3.1

1.4) Profile/Beam - 3/1 from h11478 / 1101_nonechosounder_dp / 2005-214 / dp_1101_214

Survey Summary

Survey Position: 055° 58' 04.210" N, 158° 53' 06.849" W

Least Depth: -0.19 m

Timestamp: 2005-214.17:14:41.000 (08/02/2005)

DP Dataset: h11478 / 1101_nonechosounder_dp / 2005-214 / dp_1101_214

Profile/Beam: 3/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Present position of river mouth.

QUA: GPSmode=2, SVs=6, HDOP=1.40

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1101_nonechosounder_dp/2005-214/dp_1101_214	3/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

0fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.2m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - river mouth

Office Notes

Retain as charted.

Feature Images

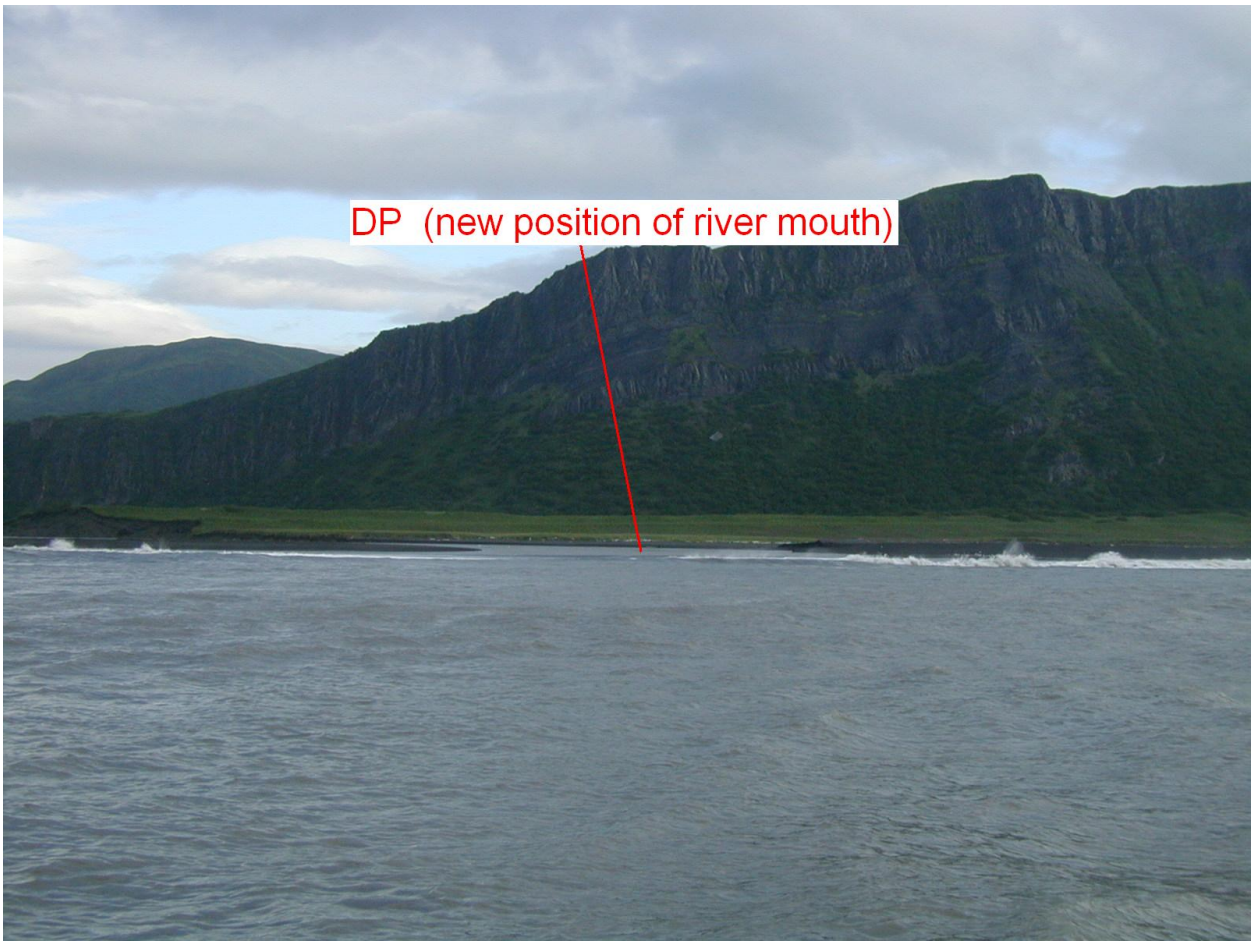


Figure 1.4.1

1.5) Profile/Beam - 1/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 59' 10.167" N, 158° 48' 36.446" W

Least Depth: 0.05 m

Timestamp: 2005-215.16:37:26.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 1/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Lidar Ledge Verified, but is closer to MHW than lidar position.

DP is on edge of ledge. Lidar RK posiitoin is ~5-10M from ledge. Area is steeply sloping rock covered with low lying kelp ~2-3 M

QUA: GPSmode=2, SVs=8, HDOP=0.90

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	1/1	0.00	000.0	Primary
H11263_LidarInvestigations.xls	27	11.57	347.1	Secondary
h11478/1101_nonechosounder_dp/2005-214/dp_1101_214	1/1	42.47	224.6	Secondary

Hydrographer Recommendations

Do Not Chart Lidar Ledge, Ledge is 10m from MHW.

S-57 Data

Geo object 1: Seabed area (SBDARE)

Office Notes

Concur with clarification. Chart Lidar Islets and submerged Lidar rock.

Feature Images

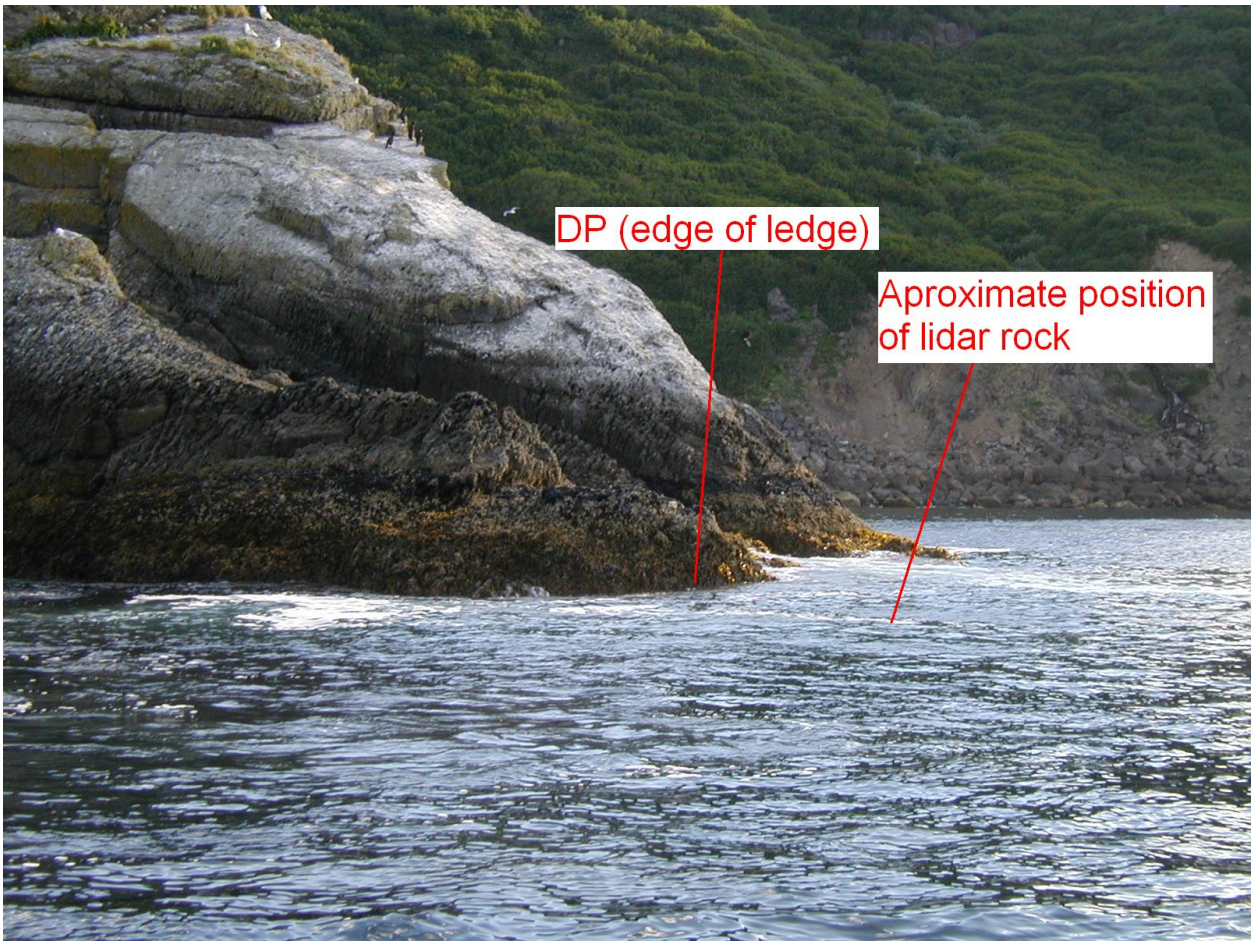


Figure 1.5.1

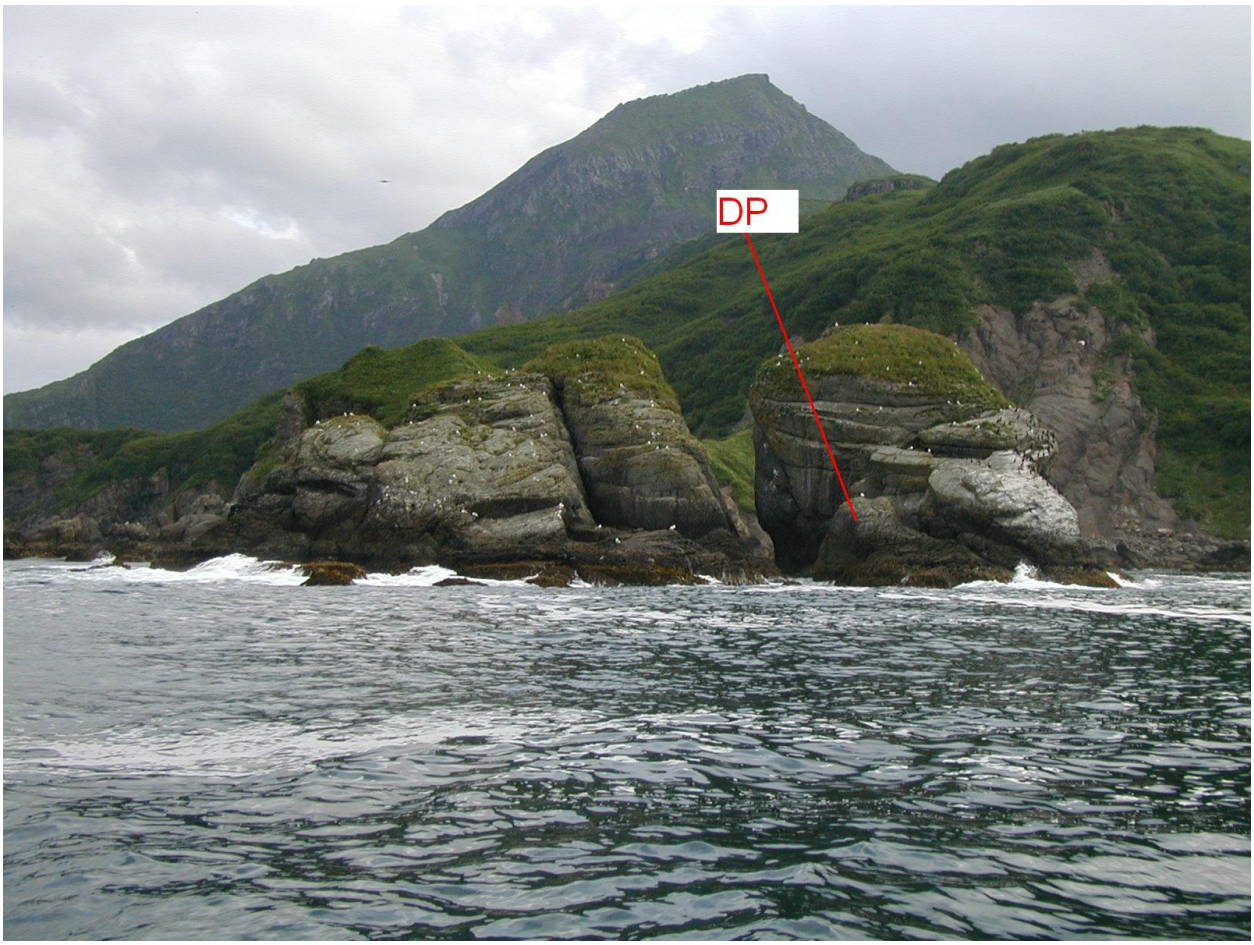


Figure 1.5.2

1.6) Profile/Beam - 3/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 55' 39.107" N, 158° 51' 32.521" W

Least Depth: 2.15 m

Timestamp: 2005-215.17:17:46.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 3/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

lidar RK disproval

DP at position of lidar rock in thick patch of kelp. Probing kelp with 2m pole could not find bottom

QUA: GPSmode=2, SVs=8, HDOP=1.00

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	3/1	0.00	000.0	Primary
H11263_LidarInvestigations.xls	26	2.49	250.9	Secondary

Hydrographer Recommendations

Do not chart Lidar Rk

Cartographically-Rounded Depth (Affected Charts):

1fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

2.1m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

Feature Images

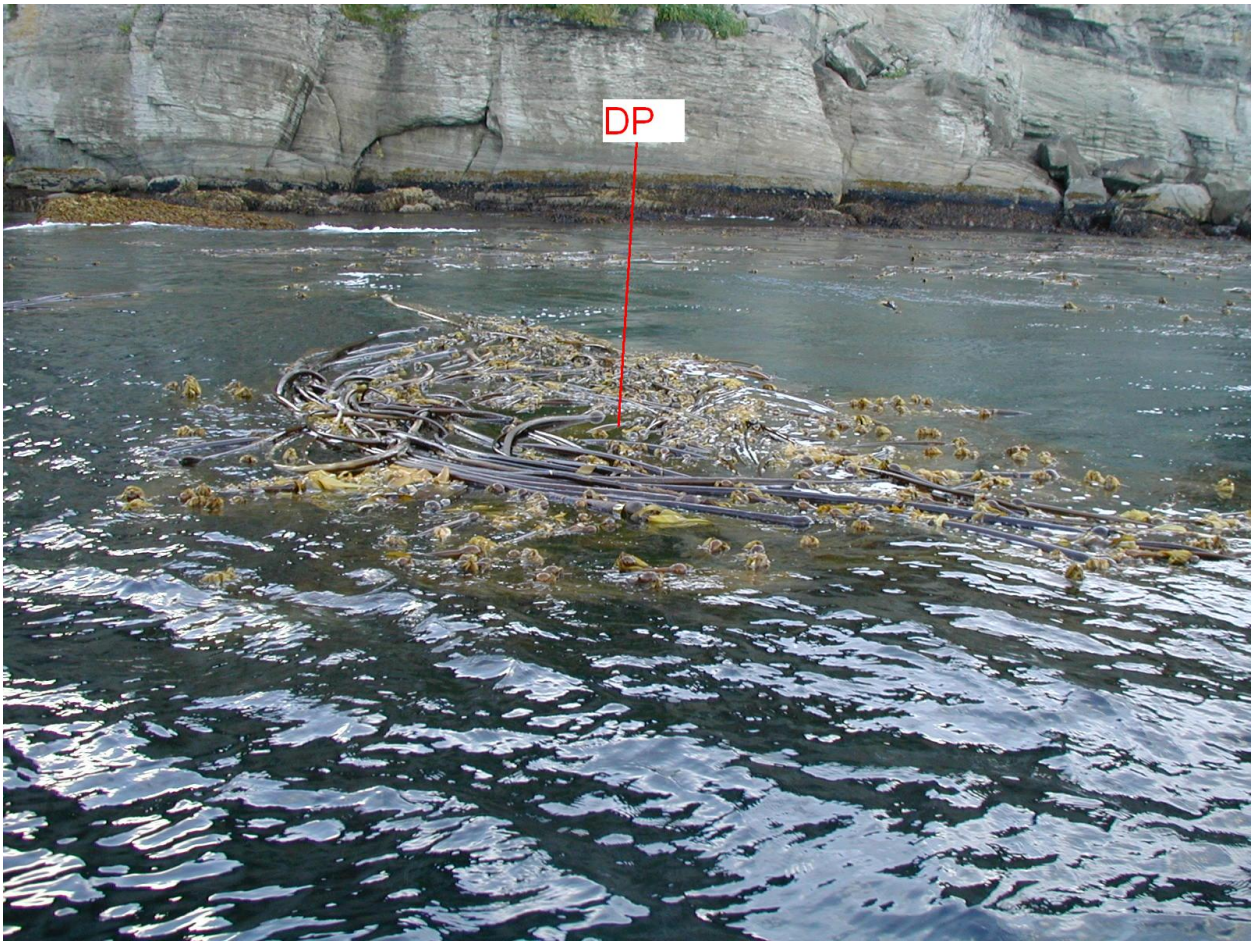


Figure 1.6.1

1.7) Profile/Beam - 4/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 55' 55.705" N, 158° 51' 05.919" W

Least Depth: -1.81 m

Timestamp: 2005-215.17:28:27.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 4/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

new RK

Marks edge of foul area

QUA: GPSmode=2, SVs=7, HDOP=1.50

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	4/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk and use to denote Foul Area

Cartographically-Rounded Depth (Affected Charts):

1fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-1.8m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - new RK Marks edge of foul area

VALSOU - -1.810 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

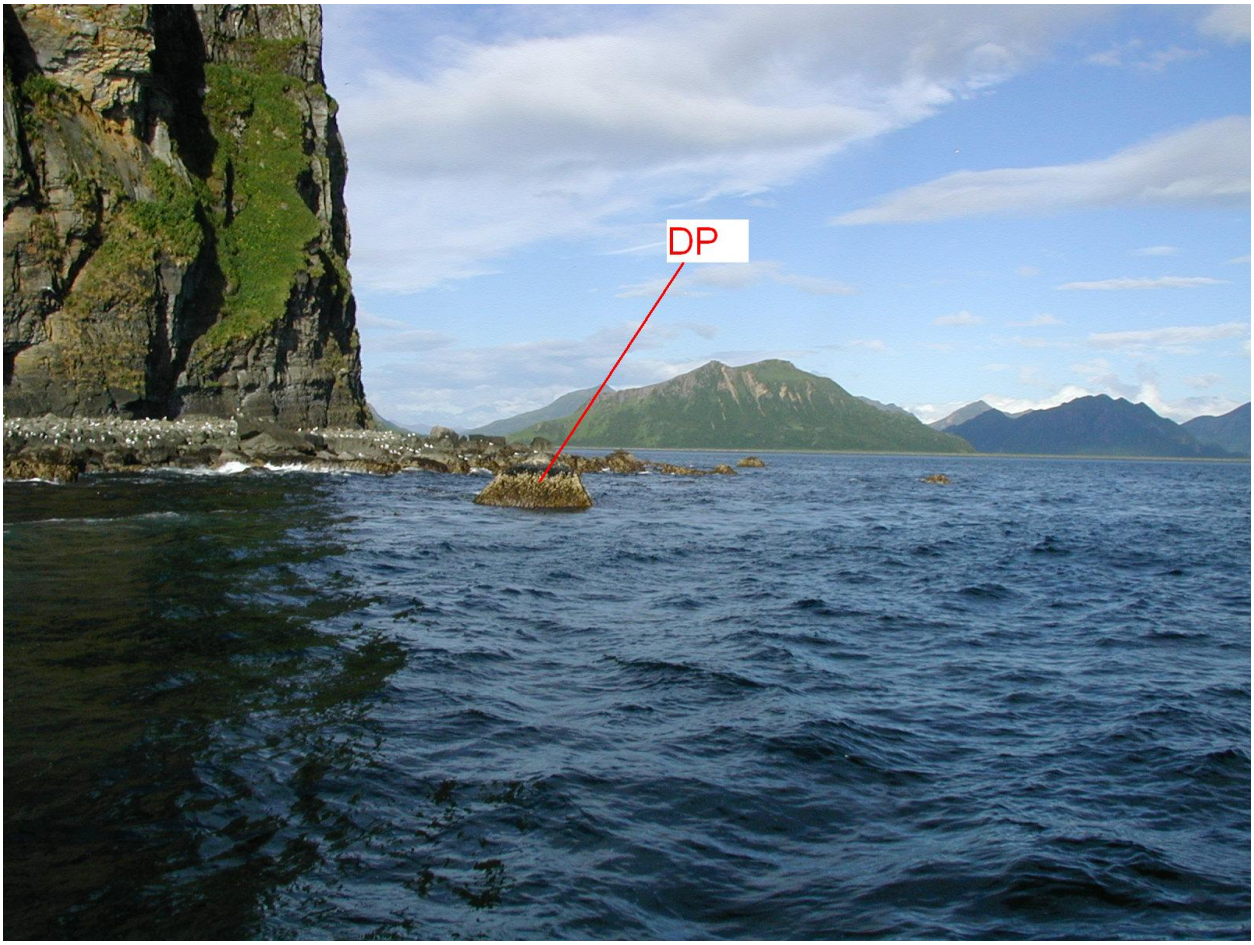


Figure 1.7.1

1.8) Profile/Beam - 5/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 55' 56.366" N, 158° 51' 14.122" W

Least Depth: -1.22 m

Timestamp: 2005-215.17:31:43.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 5/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New Rk

QUA: GPSmode=2, SVs=7, HDOP=1.50

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	5/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-1.2m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

VALSOU - -1.217 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

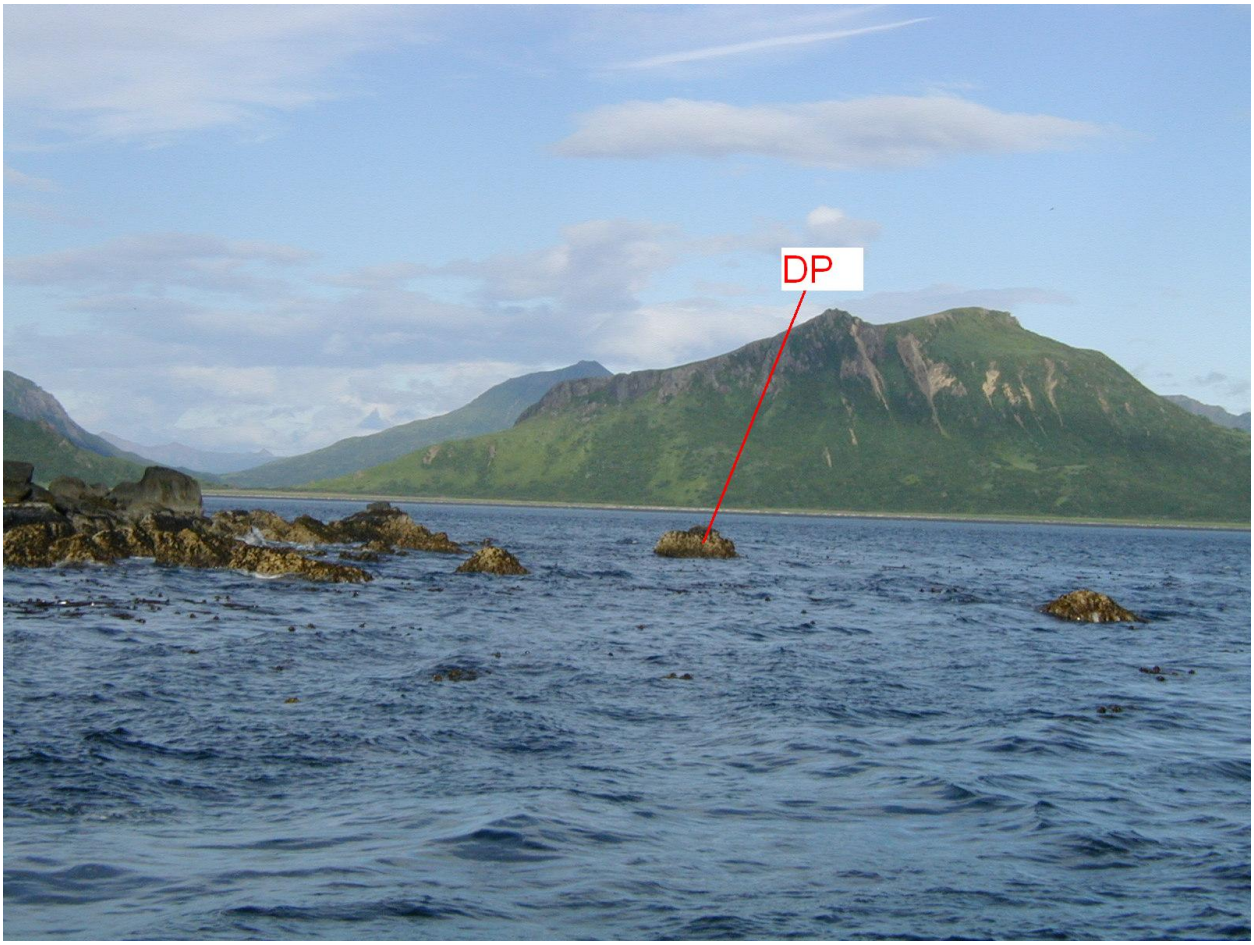


Figure 1.8.1

1.9) Profile/Beam - 6/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 55' 29.671" N, 158° 51' 20.140" W

Least Depth: -0.36 m

Timestamp: 2005-215.17:41:51.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 6/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New RK

Marks edge of Foul Area

QUA: GPSmode=2, SVs=8, HDOP=1.00

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	6/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk and use to denote Foul Area

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.4m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New RK Marks edge of Foul Area

VALSOU - -0.365 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

Figure 1.9.1

1.10) Profile/Beam - 7/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 54' 59.804" N, 158° 54' 43.684" W

Least Depth: -0.20 m

Timestamp: 2005-215.18:10:10.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 7/1

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

New RK

QUA: GPSmode=2, SVs=8, HDOP=1.00

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	7/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart New Rk

Cartographically-Rounded Depth (Affected Charts):

0fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

0fm 0ft (16556_1)

-.2m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New RK

VALSOU - -0.202 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

Figure 1.10.1

1.11) Profile/Beam - 8/1 from h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Survey Summary

Survey Position: 055° 55' 09.367" N, 158° 54' 31.447" W

Least Depth: -2.29 m

Timestamp: 2005-215.18:24:34.000 (08/03/2005)

DP Dataset: h11478 / 1103_nonechosounder_dp / 2005-215 / dp_1103_215

Profile/Beam: 8/1

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Chd (16561) islet is bare rk

QUA: GPSmode=2, SVs=6, HDOP=1.90

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	8/1	0.00	000.0	Primary

Hydrographer Recommendations

Modify CHD (16561) Islet to Rk

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-1fm 1ft (16556_1)

-2.3m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - Chd (16561) islet is bare rk

VALSOU - -2.287 m

WATLEV - 1:partly submerged at high water

Office Notes

Concur with clarification. Remove charted (16561) islet and chart field verified rock.

Feature Images

Figure 1.11.1

1.12) Profile/Beam - 1898/231 from h11478 / 1016_reson8125_hvf / 2005-220 / 098_1851

Survey Summary

Survey Position: 055° 55' 25.588" N, 158° 50' 47.797" W

Least Depth: 4.47 m

Timestamp: 2005-220.18:54:47.238 (08/08/2005)

Survey Line: h11478 / 1016_reson8125_hvf / 2005-220 / 098_1851

Profile/Beam: 1898/231

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Shoal sounding on Lidar Rk. Feature is shoal area approximatly 100 m long, 50 m wide, roughly prism shaped, well represented in MB.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1016_reson8125_hvf/2005-220/098_1851	1898/231	0.00	000.0	Primary
H11263_LidarInvestigations.xls	31	1.51	107.0	Secondary

Hydrographer Recommendations

Chart as Subm. Rk, Use MB position and height

Cartographically-Rounded Depth (Affected Charts):

2 ½fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

4.4m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 4.467 m

Office Notes

Concur.

1.13) GP No. - 3 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 11.364" N, 158° 54' 28.312" W

Least Depth: 6.17 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 3

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible rock in kelp. Note: 1.2 Rk 35m WSW, islets 115m W.;If possible confirm rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	3	0.00	000.0	Primary
h11478/1103_singlebeam_hvf/2005-215/000_1829	963/1	1.56	357.3	Secondary

Hydrographer Recommendations

Chart Lidar Rk, USE depth from SB (6.17m)

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

3fm 2ft (16556_1)

6.1m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 6.17 m

WATLEV - 3:always under water/submerged

Office Notes

Concur.

1.14) GP No. - 4 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 16.867" N, 158° 54' 32.090" W

Least Depth: -0.68 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 4

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible drying rock in kelp. Note: Islet 60m SW.;Confirm New Rock

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	4	0.00	000.0	Primary
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	9/1	1.34	244.1	Secondary

Hydrographer Recommendations

Chart Lidar Rk

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

0fm 2ft (16556_1)

-.7m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - -0.68 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

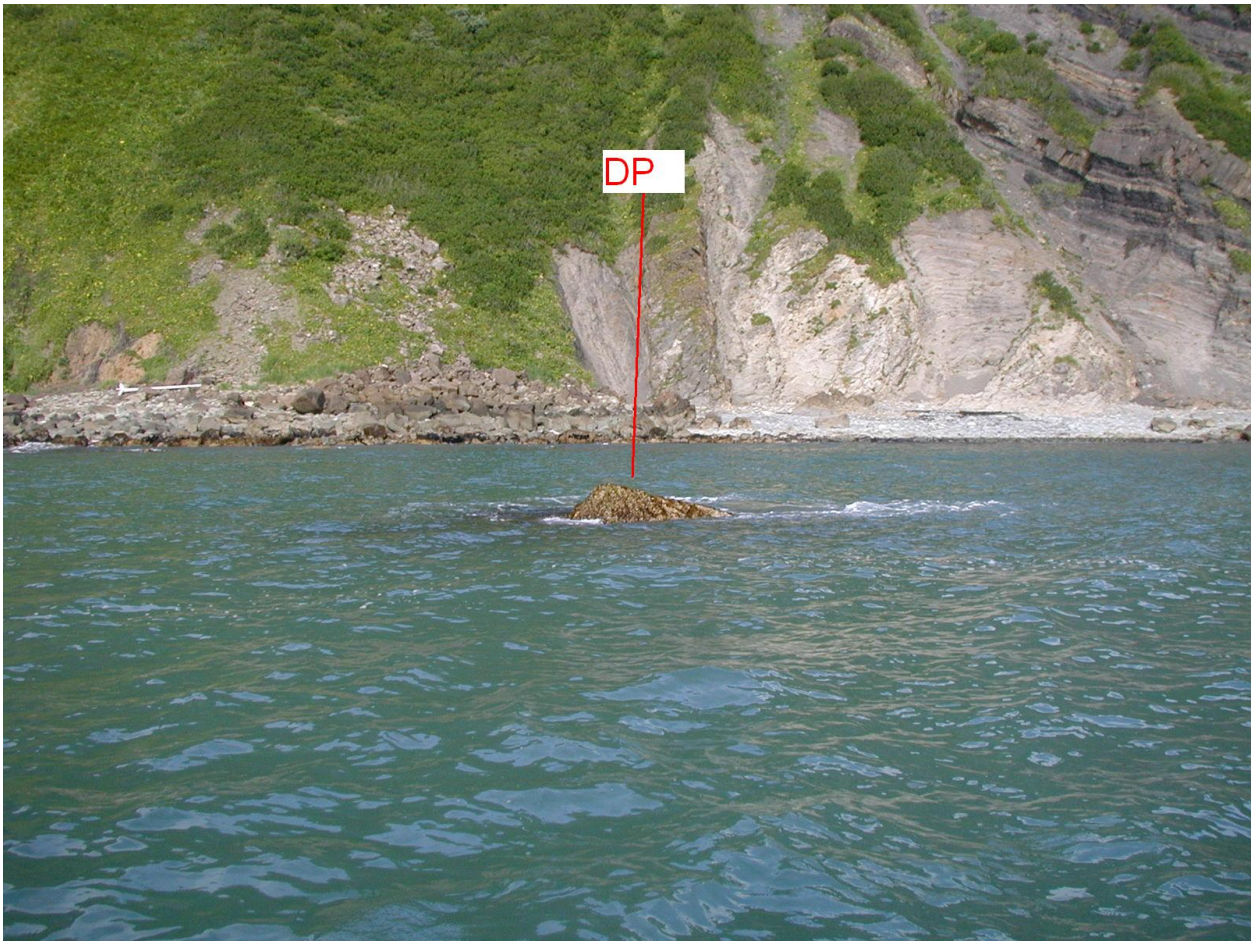


Figure 1.14.1

1.15) GP No. - 5 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 59' 42.843" N, 158° 48' 52.268" W

Least Depth: -0.68 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 5

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible drying Rk in kelp. Note: Many drying rocks 200m S in this area of kelp not detected by system, but visible in video.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	5	0.00	000.0	Primary
h11478/1101_nonechosounder_dp/2005-214/dp_1101_214	2/1	10.53	047.1	Secondary

Hydrographer Recommendations

Do not chart Lidar Rk, too close to shore.

S-57 Data

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

Attributes: VALSOU - -0.68 m

WATLEV - 4:covers and uncovers

Office Notes

Do not concur. Chart Lidar rock.

Feature Images

Figure 1.15.1

1.16) GP No. - 6 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 54' 37.001" N, 158° 49' 51.553" W

Least Depth: -1.93 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 6

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible drying rock in kelp. See DTON No. 1. Note: Rocky shoal extends 100m NW.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	6	0.00	000.0	Primary
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	2/1	11.71	309.3	Secondary
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	1/1	20.57	118.5	Secondary

Hydrographer Recommendations

Chart Lidar Rk at Lidar Position, Use DPs for extents

Cartographically-Rounded Depth (Affected Charts):

-1fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-2.0m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - -1.93 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

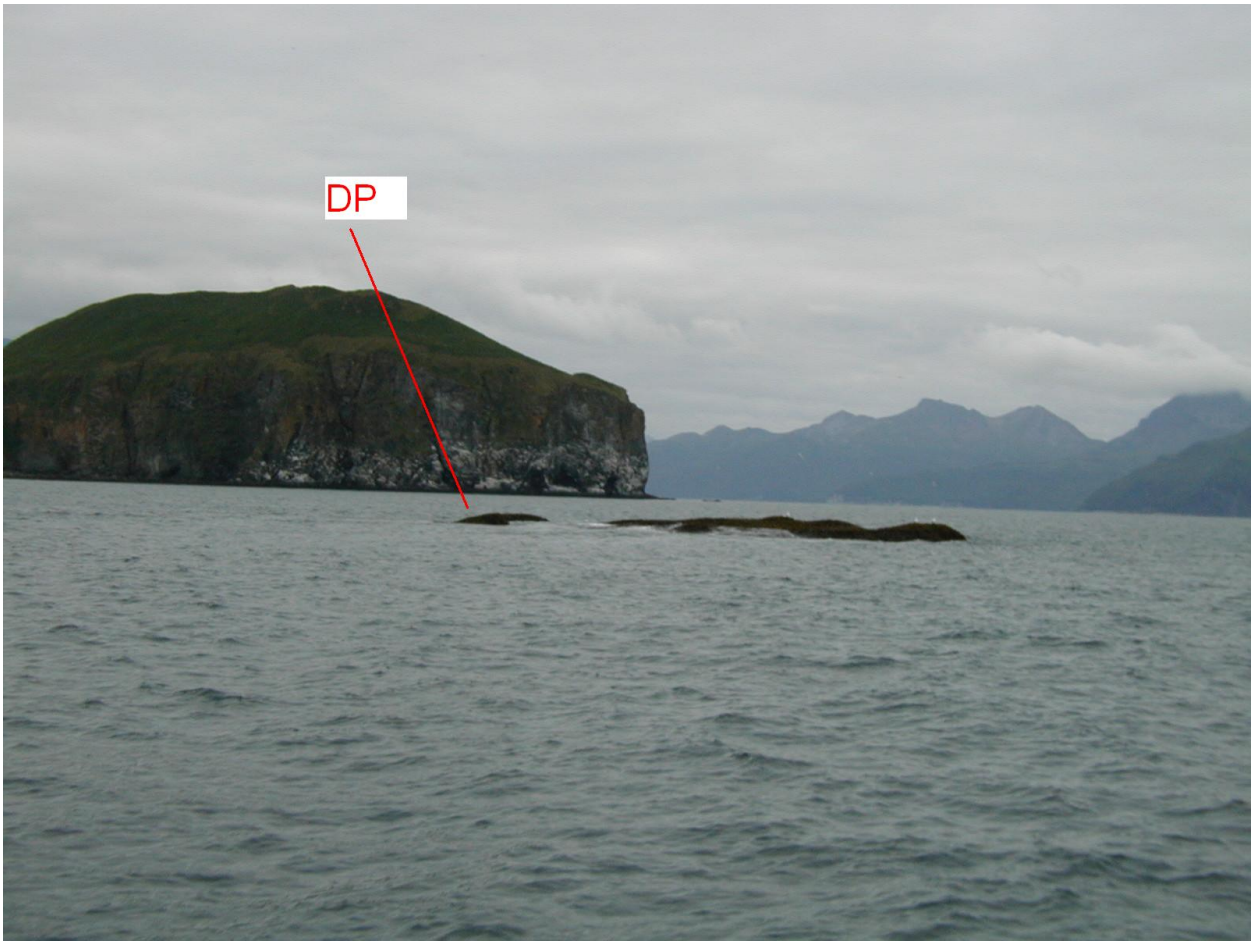


Figure 1.16.1

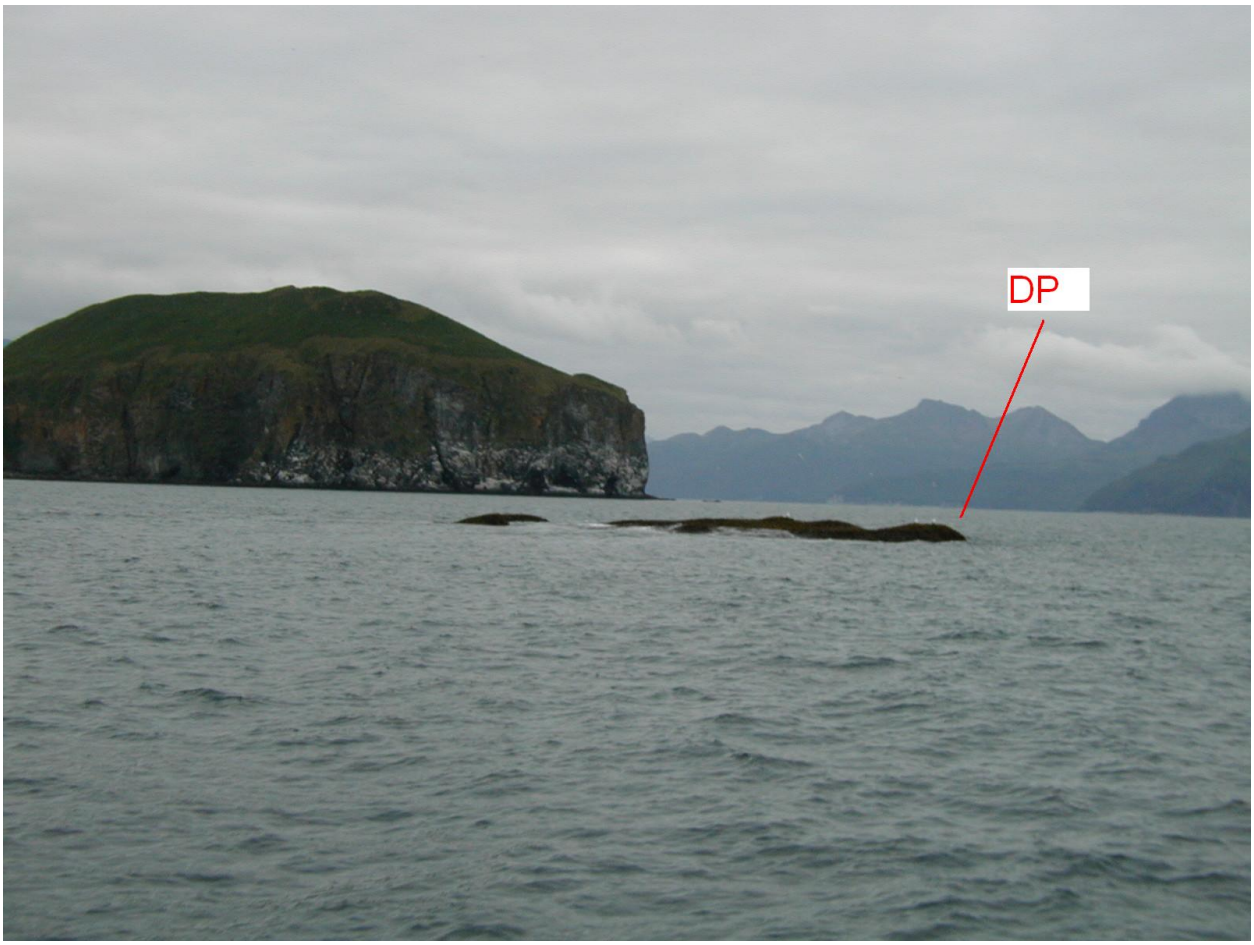


Figure 1.16.2

1.17) GP No. - 7 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 54' 53.333" N, 158° 49' 35.914" W

Least Depth: 4.17 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 7

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. See DTON No. 6. Note: 9.7 90m SW.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	7	0.00	000.0	Primary
h11478/1021_reson8101_hvf/2005-233/010_2257	410/64	12.28	306.6	Secondary
h11478/dive/2005-221/08092005	2/1	12.28	306.6	Secondary

Hydrographer Recommendations

Chart Lidar Rk. Use depth from dive (1.36m)

Cartographically-Rounded Depth (Affected Charts):

2 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

4.1m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk. Use depth from dive (1.36m)

Office Notes

Do not concur. Chart shoaler adjacent submerged 1.187m field verified rock found by multibeam at 55-54-53.097N, 158-49-35.343W.

1.18) GP No. - 8 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 06.191" N, 158° 50' 19.805" W

Least Depth: 15.80 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 8

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	8	0.00	000.0	Primary
h11478/1006_reson8101_hvf/2005-220/062_2248	57/36	7.77	123.2	Secondary

Hydrographer Recommendations

Chart Lidar Rk. Use depth from MB (9.29m)

Cartographically-Rounded Depth (Affected Charts):

8 ½fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

15.8m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk. Use depth from MB (9.29m)

Office Notes

Concur with clarification. Chart submerged 9.295m field verified rock found by multibeam at 55-55-06.329N, 158-50-20.181W.

1.19) GP No. - 9 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 19.400" N, 158° 49' 53.560" W

Least Depth: 4.19 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 9

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Note: 3.8 Rk 45m ENE, 2.3 Rk 90m ENE.;Verify possible rock in kelp

RAINIER NOTE: Lidar Rk is 25m W of new Foul area. Lidar detection is in 13m depth. Lidar Rk is detection on kelp.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	9	0.00	000.0	Primary

Hydrographer Recommendations

Do not chart Lidar Rk. Chart New Foul Area

Cartographically-Rounded Depth (Affected Charts):

2 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

4.2m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 4.19 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Chart new foul area and chart Lidar rock.

1.20) GP No. - 10 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 13.091" N, 158° 49' 09.862" W

Least Depth: 2.22 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 10

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Note: 0.8 Rk 60m WNW, 1.4 Rk 40m SSW, 0.6 Rk 105m WSW.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	10	0.00	000.0	Primary
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	3/1	10.71	143.3	Secondary

Hydrographer Recommendations

Chart Lidar Rk, use height from DP1585 (-0.31m)

Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

2.2m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk, use height from DP1585 (-0.31m)

Office Notes

Concur.

Feature Images

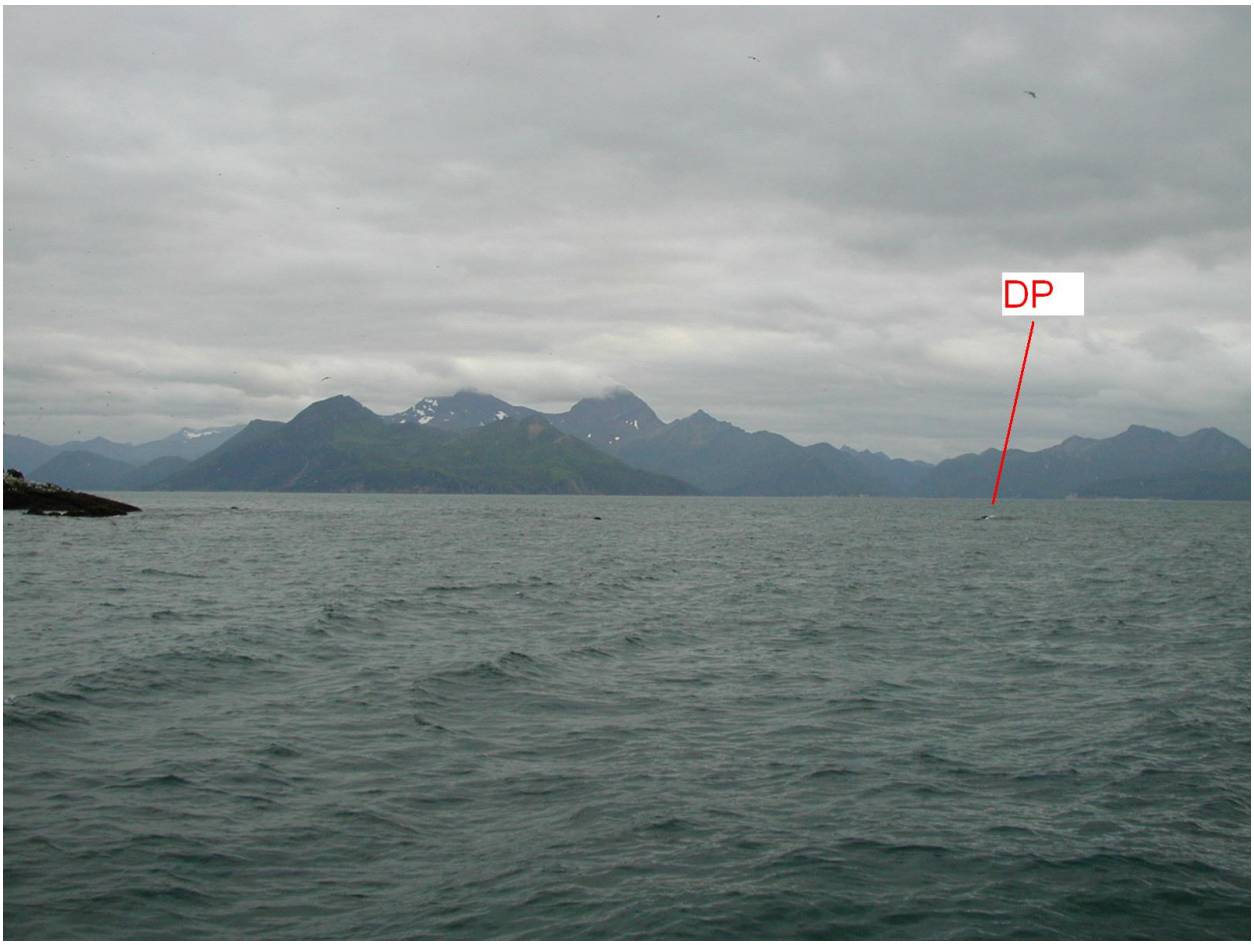


Figure 1.20.1

1.21) GP No. - 12 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 54' 54.401" N, 158° 51' 14.334" W

Least Depth: 4.96 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 12

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. See DTON No. 4.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	12	0.00	000.0	Primary
h11478/1016_reson8125_hvf/2005-220/171_1740	240/1	6.15	339.4	Secondary
h11478/dive/2005-221/08092005	3/1	6.15	339.4	Secondary

Hydrographer Recommendations

Chart Lidar Rk, use depth from dive (4.88m)

Cartographically-Rounded Depth (Affected Charts):

2 ¾fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

4.9m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk, use depth from dive (4.88m)

Office Notes

Do not concur. Chart field verified 4.725m submerged rock found by multibeam at 55-54-54.216N, 158-51-14.210W.

1.22) GP No. - 14 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 08.498" N, 158° 51' 06.281" W

Least Depth: -1.00 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 14

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Posssible drying rock in kelp. See DTON No. 5. Note: 2.4 Rk 100m E, 1.2 Rk 75m SSW.;Verify possible rock in kelp

RAINIER Note: Drying Lidar Rk is the prominent Rk of New Foul Area. Lidar Rks (FAU17 and AU24) are other detections on some of the many kelp covered rocks in this area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	14	0.00	000.0	Primary
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	8/1	3.18	235.1	Secondary
H11263_LidarInvestigations.xls	35	104.07	261.6	Secondary (grouped)
H11263_LidarInvestigations.xls	15	108.87	051.2	Secondary (grouped)

Hydrographer Recommendations

Chart Lidar Rk as Drying Rk. Chart New Foul Area

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-1.0m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - -1.0 m

WATLEV - 4:covers and uncovers

Office Notes

Concur.

Feature Images

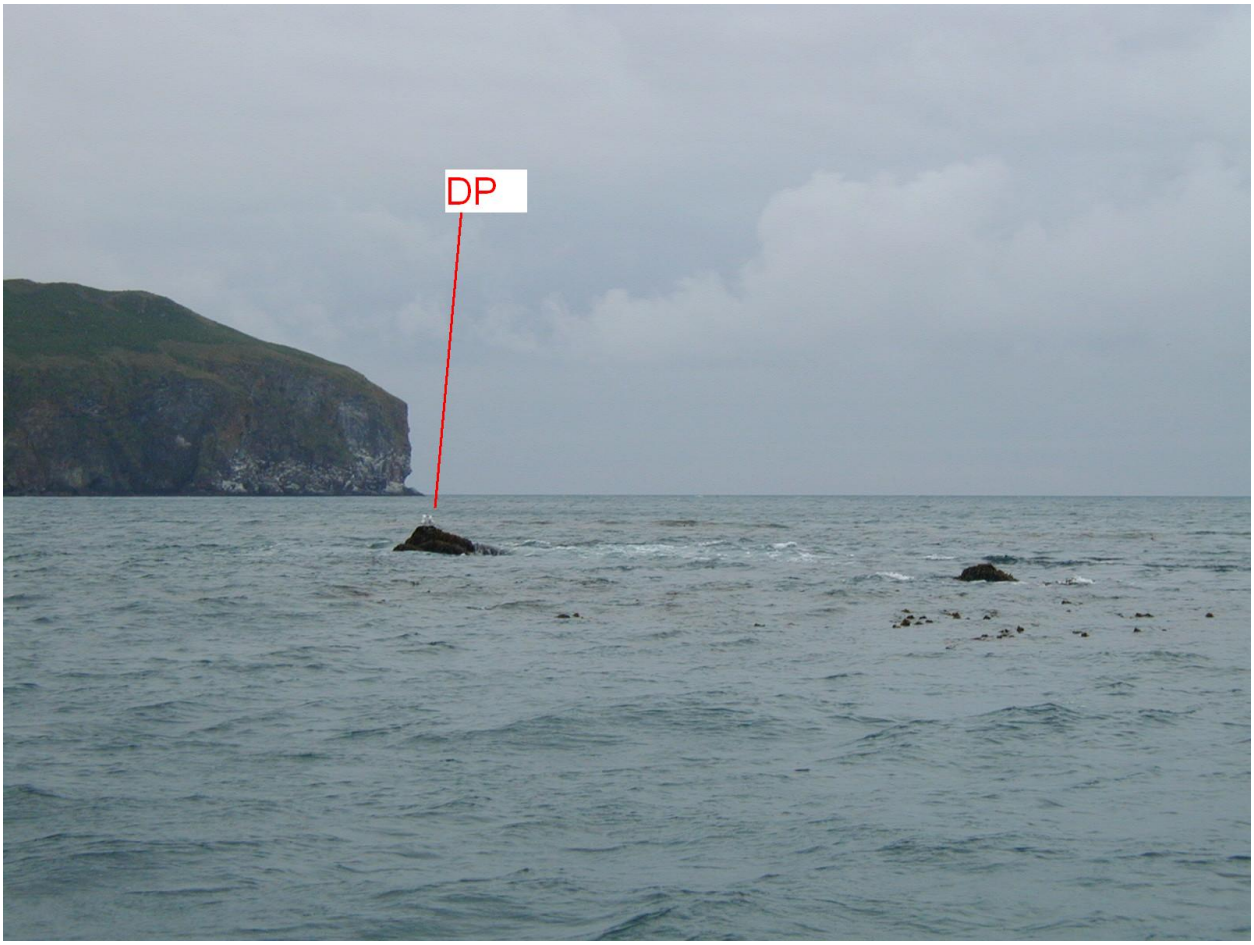


Figure 1.22.1

1.23) GP No. - 16 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 09.443" N, 158° 51' 42.844" W

Least Depth: 2.61 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 16

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	16	0.00	000.0	Primary
h11478/1016_reson8125_hvf/2005-220/014_2320	958/142	20.33	283.6	Secondary
h11478/dive/2005-221/08092005	5/1	20.33	283.6	Secondary

Hydrographer Recommendations

Chart Lidar Rk, use depth from dive (7.48m)

Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

2.6m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk, use depth from dive (7.48m)

Office Notes

Concur.

1.24) GP No. - 18 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 18.730" N, 158° 51' 16.226" W

Least Depth: 5.92 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 18

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Eastern extent of large rocky shoal. Note: Multiple shoal depths extend 350m W to charted islet.;Verify possible rock in kelp

RAINIER Note: Lidar Rks (AU27 FAU13) are returns from kelp covered rocks in or near New Foul Area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	18	0.00	000.0	Primary
H11263_LidarInvestigations.xls	33	4.42	235.2	Secondary (grouped)

Hydrographer Recommendations

Do Not Chart Lidar Rks. Chart New Foul Area.

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

5.9m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 5.92 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Chart new foul area. Chart field verified 3.705m submerged rock found by multibeam at 55-55-18.904N, 158-51-11.336W.

1.25) GP No. - 19 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 23.604" N, 158° 50' 54.193" W

Least Depth: -0.17 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 19

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible drying rock in kelp. See DTON No. 2. Note: 0.2 40m NE, 4.4 Rk 90m WSW, 2.4 Rk 120m NE.;If possible confirm if a rock exists in kelp and least depth

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	19	0.00	000.0	Primary
h11478/1101_nonechosounder_dp/2005-213/dp_1101_213	7/1	6.51	332.3	Secondary

Hydrographer Recommendations

Chart Lidar Rk, use height from DP(1661) (-0.48m)

Cartographically-Rounded Depth (Affected Charts):

0fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.2m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk, use height from DP(1661) (-0.48m)

Office Notes

Concur.

Feature Images

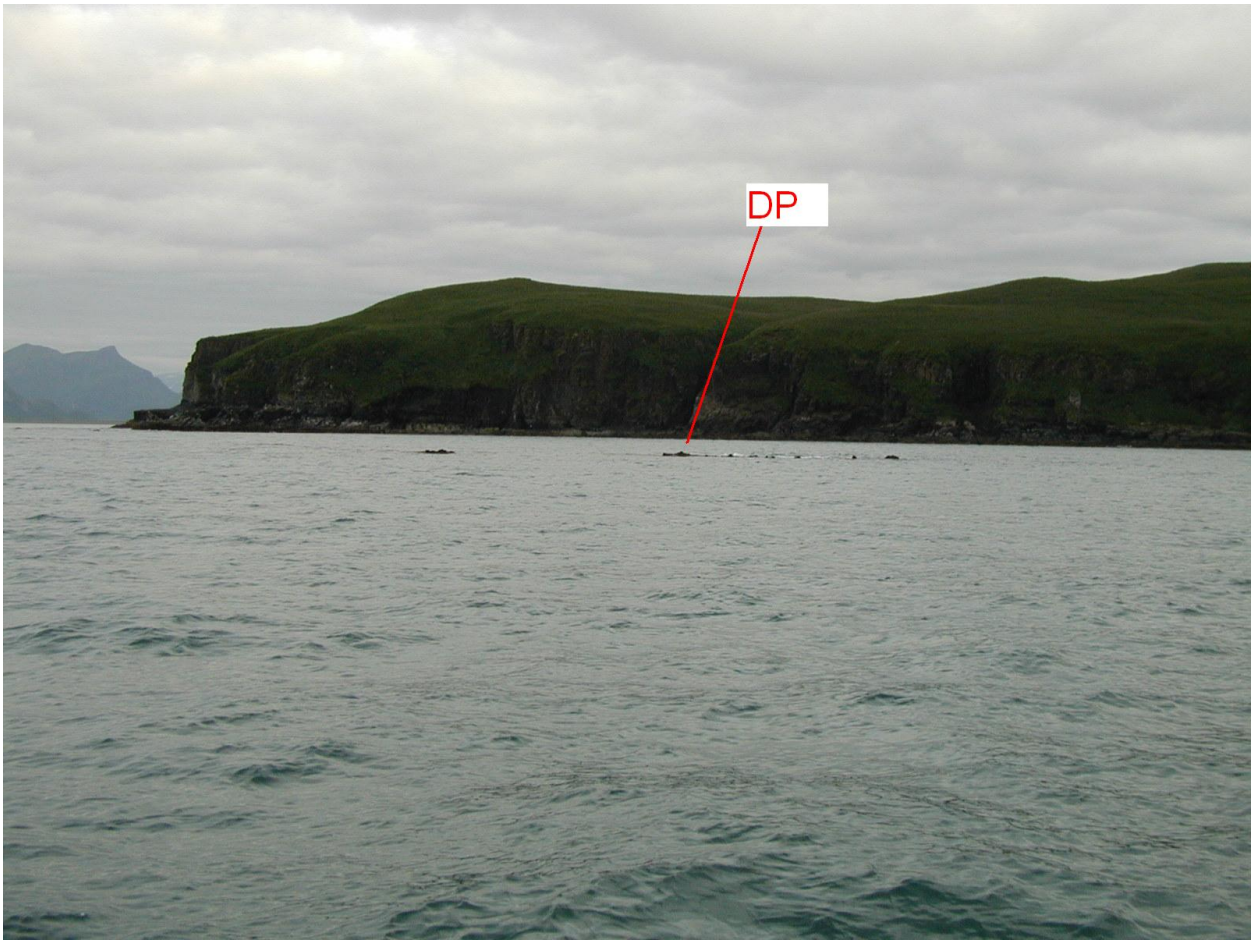


Figure 1.25.1

1.26) GP No. - 20 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 09.603" N, 158° 50' 13.682" W

Least Depth: 17.02 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 20

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp.;Verify possible rock in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	20	0.00	000.0	Primary
h11478/1006_reson8101_hvf/2005-220/057_2344	496/87	16.12	240.9	Secondary

Hydrographer Recommendations

Chart Lidar Rk. Use Depth from MB (12.77m)

Cartographically-Rounded Depth (Affected Charts):

9 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

17.0m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk. Use Depth from MB (12.77m)

Office Notes

Concur with clarification. Chart field verified 12.771m submerged rock found by multibeam at 55-55-09.856N, 158-50-12.867W.

1.27) GP No. - 23 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 03.706" N, 158° 51' 15.814" W

Least Depth: 6.11 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 23

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Note: 3.7 Rk 50m W, 3.2 Rk 100m WSW.;Verify possible rock in kelp

RAINIER Note: Lidar Rk is sloping bottom in New Foul Area. Many Rocks and thick kelp.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	23	0.00	000.0	Primary

Hydrographer Recommendations

Do not Chart Lidar Rk. Chart New Foul Area

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

6.1m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 6.11 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Chart new foul area. Chart field verified 4.959m submerged rock found by multibeam at 55-55-03.389N, 158-51-20.610W.

1.28) GP No. - 24 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 45.657" N, 158° 51' 35.634" W

Least Depth: -0.37 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 24

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible drying rock in kelp.;Verify if drying rock exists in kelp

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	24	0.00	000.0	Primary
h11478/1103_nonechosounder_dp/2005-215/dp_1103_215	2/1	5.94	147.0	Secondary

Hydrographer Recommendations

Chart Lidar Rk

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

-.4m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - -0.37 m

WATLEV - 5:awash

Office Notes

Concur.

Feature Images

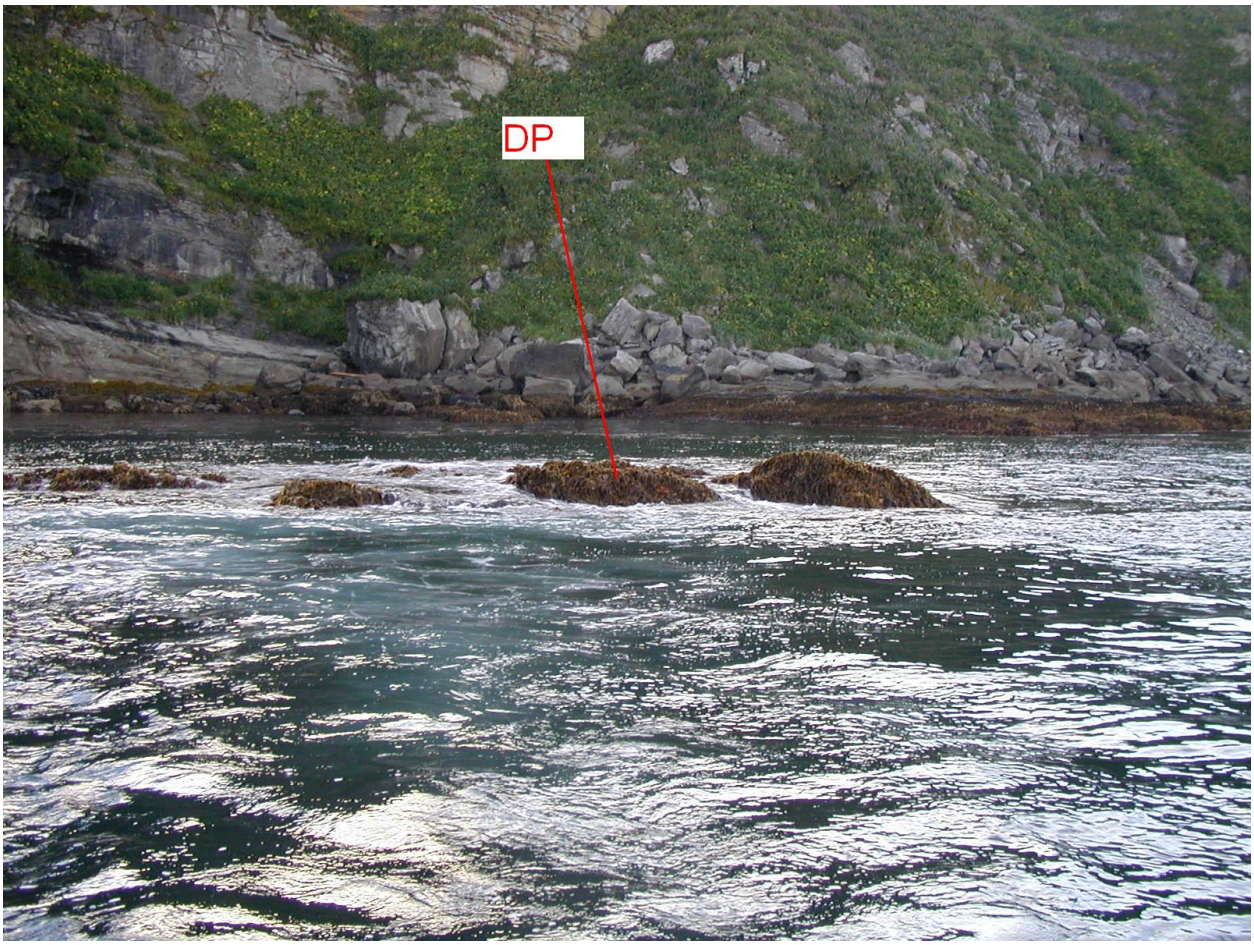


Figure 1.28.1

1.29) GP No. - 25 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 31.264" N, 158° 54' 34.508" W

Least Depth: 5.15 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 25

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp.;Verify possible rock in kelp

RAINIER remarks:

Lidar Rk is sloping bathymetry in generally rocky area. Investigated with SB star pattern.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	25	0.00	000.0	Primary

Hydrographer Recommendations

Use Rky designation to note Rocky Bottom

S-57 Data

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

Attributes: VALSOU - 5.15 m

WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Chart submerged Lidar rock.

1.30) GP No. - 30 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 41.704" N, 158° 51' 36.499" W

Least Depth: [None]

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 30

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

No detectons by system, in 13-15m of water. 120m W of midcoast of Nth Brother Island;Lidar Kelp- confirm if feature or shoaler depth exist

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	30	0.00	000.0	Primary
h11478/1006_reson8101_hvf/2005-200/903_1857	498/65	14.89	156.1	Secondary

Hydrographer Recommendations

Chart Lidar Rk. Use Depth from MB (8.08m)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk. Use Depth from MB (8.08m)

Office Notes

Concur.

1.31) GP No. - 32 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 22.802" N, 158° 50' 59.468" W

Least Depth: [None]

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 32

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Some detections, possibly connected with previous two entries. 500m SE of Nth Brother Island.;Confirm if any feature exists in kelp and verify least depth

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	32	0.00	000.0	Primary
h11478/1016_reson8125_hvf/2005-220/098_1851	5349/230	7.22	062.8	Secondary

Hydrographer Recommendations

Chart Lidar Rk, use depth from MB (7.35m)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk, use depth from MB (7.35m)

Office Notes

Concur.

1.32) GP No. - 36 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 05.321" N, 158° 51' 14.223" W

Least Depth: [None]

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 36

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Many detections, end of large kelp area which includes previous two. 800 - 900m SSE of Nth Brother Island. AU24;Lidar Kelp- confirm if feature or shoaler depth exist

Rainier Note: Lidar Rk is in New Foul Area

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	36	0.00	000.0	Primary
h11478/1016_reson8125_hvf/2005-220/085_1751	1184/12	2.93	299.8	Secondary

Hydrographer Recommendations

Chart Lidar Rk and New Foul Area. Use depth from MB (6.82m)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar Rk and New Foul Area. Use depth from MB (6.82m)

Office Notes

Concur with clarification. Chart new foul area. Chart field verified 4.959 submerged rock found by multibeam at 55-55-03.389N, 158-51-20.610W.

1.33) GP No. - 37 from H11263_LidarInvestigations.xls

Survey Summary

Survey Position: 055° 55' 03.462" N, 158° 51' 28.918" W

Least Depth: [None]

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11263_LidarInvestigations.xls

GP No.: 37

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Many detections, very large kelp area. 900m SSW of Nth Brother Island. AU22;Lidar Kelp- verify if a feature exists or least depth

RAINIER Note: Lidar Rk is in New Foul Area. Many Rocks and thick kelp.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11263_LidarInvestigations.xls	37	0.00	000.0	Primary
H11263_LidarInvestigations.xls	13	45.91	252.0	Secondary (grouped)

Hydrographer Recommendations

Do Not Chart Lidar Rk. Chart New Foul Area

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Attributes: INFORM - Chart Lidar features

Office Notes

Concur with clarification. Chart new foul area. Chart field verified 4.959 submerged rock found by multibeam at 55-55-03.389N, 158-51-20.610W.

1.34) GP No. - 1 from H11262_LidarInvestigation.xls

Survey Summary

Survey Position: 055° 59' 11.044" N, 158° 48' 33.276" W

Least Depth: 1.03 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11262_LidarInvestigation.xls

GP No.: 1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Note: Many islets and drying rocks in vicinity.;Confirm New Rock

RAINIER Note: Not Specifically Addressed, Near CFF Foul in area of many rocks.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11262_LidarInvestigation.xls	1	0.00	000.0	Primary

Hydrographer Recommendations

Chart Lidar Rk

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

1.0m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 1.03 m

Office Notes

Concur.

1.35) GP No. - 2 from H11262_LidarInvestigation.xls

Survey Summary

Survey Position: 055° 59' 09.103" N, 158° 48' 20.612" W

Least Depth: 0.26 m

Timestamp: 1990-001.11:60:00.000 (01/01/1990)

GP Dataset: H11262_LidarInvestigation.xls

GP No.: 2

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Possible Rk in kelp. Note: Islets and drying rocks inshore, 0.0 Rk 80m ENE, 0.6 Rk 140m ENE.;If possible confirm New Rock Awash

RAINIER Note: Not Specifically Addressed, Near CFF Foul in area of many rocks.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11262_LidarInvestigation.xls	2	0.00	000.0	Primary

Hydrographer Recommendations

Chart Lidar Rk

Cartographically-Rounded Depth (Affected Charts):

0fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

.2m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 0.26 m

Office Notes

Concur.

1.36) Profile/Beam - 133/1 from h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Survey Summary

Survey Position: 055° 54' 51.744" N, 158° 51' 22.685" W

Least Depth: 2.15 m

Timestamp: 2005-220.17:23:40.731 (08/08/2005)

Survey Line: h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Profile/Beam: 133/1

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Shoal Sounding marks W extent of shoal area. 100% MB.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1016_reson8125_hvf/2005-220/079_1723	133/1	0.00	000.0	Primary

Hydrographer Recommendations

Chart as Subm. Rk

Cartographically-Rounded Depth (Affected Charts):

1fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

2.1m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - Shoal Sounding

VALSOU - 2.145 m

Office Notes

Concur.

1.37) Profile/Beam - 614/212 from h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Survey Summary

Survey Position: 055° 54' 52.666" N, 158° 51' 20.308" W

Least Depth: 7.24 m

Timestamp: 2005-220.17:24:24.370 (08/08/2005)

Survey Line: h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Profile/Beam: 614/212

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Shoal Sounding on Lidar Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1016_reson8125_hvf/2005-220/079_1723	614/212	0.00	000.0	Primary
h11478/dive/2005-221/08092005	4/1	0.00	000.0	Secondary
H11263_LidarInvestigations.xls	11	3.38	216.0	Secondary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

4fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

7.2m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Do not chart submerged Lidar rock. Chart two adjacent shoaler field verified 2.14m and 4.725m submerged rocks found by multibeam at 55-54-51.744N, 158-51-22.685W and 55-54-54.216N, 158-51-14.210W.

1.38) Profile/Beam - 840/230 from h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Survey Summary

Survey Position: 055° 54' 53.441" N, 158° 51' 18.378" W

Least Depth: 3.60 m

Timestamp: 2005-220.17:24:50.155 (08/08/2005)

Survey Line: h11478 / 1016_reson8125_hvf / 2005-220 / 079_1723

Profile/Beam: 840/230

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Shoal sounding on New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1016_reson8125_hvf/2005-220/079_1723	840/230	0.00	000.0	Primary

Hydrographer Recommendations

Chart Subm Rk

Cartographically-Rounded Depth (Affected Charts):

2fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

3.6m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 3.604 m

Office Notes

Do not concur. Do not chart submerged rock. Chart two adjacent field verified 2.14m and 4.725m submerged rocks found by multibeam at 55-54-51.744N, 158-51-22.685W and 55-54-54.216N, 158-51-14.210W.

1.39) Profile/Beam - 1144/1 from h11478 / 1103_singlebeam_hvf / 2005-215 / 000_1829

Survey Summary

Survey Position: 055° 55' 11.018" N, 158° 54' 30.326" W

Least Depth: 2.13 m

Timestamp: 2005-215.18:31:50.289 (08/03/2005)

Survey Line: h11478 / 1103_singlebeam_hvf / 2005-215 / 000_1829

Profile/Beam: 1144/1

Charts Affected: 16556_1, 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Lidar Rk found with SB Star pattern. No MB development as shoal and inshore.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1103_singlebeam_hvf/2005-215/000_1829	1144/1	0.00	000.0	Primary
H11263_LidarInvestigations.xls	29	5.78	304.7	Secondary

Hydrographer Recommendations

Chart lidar Rk, use SB depth (2.13m)

Cartographically-Rounded Depth (Affected Charts):

1fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

1fm 1ft (16556_1)

2.1m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - Lidar Rk found with SB Star pattern. No MB development as shoal and inshore.

VALSOU - 2.125 m

Office Notes

Concur.

1.40) Profile/Beam - 19/30 from h11478 / 1006_reson8101_hvf / 2005-220 / 060_2238

Survey Summary

Survey Position: 055° 55' 10.872" N, 158° 50' 08.383" W

Least Depth: 13.20 m

Timestamp: 2005-220.22:38:18.295 (08/08/2005)

Survey Line: h11478 / 1006_reson8101_hvf / 2005-220 / 060_2238

Profile/Beam: 19/30

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Lidar Rk Verified 37m W of Lidar Position, Shoal Sounding

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1006_reson8101_hvf/2005-220/060_2238	19/30	0.00	000.0	Primary
H11263_LidarInvestigations.xls	21	11.48	274.0	Secondary

Hydrographer Recommendations

Chart Lidar Rk with MB position and depth (13.20m)

Cartographically-Rounded Depth (Affected Charts):

7 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

13.2m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 13.201 m

Office Notes

Do not concur. Do not chart submerged Lidar rock. Chart adjacent shoaler field verified submerged 12.771m field verified rock found by multibeam at 55-55-09.856N, 158-50-12.867W.

1.41) Profile/Beam - 300/7 from h11478 / 1016_reson8125_hvf / 2005-220 / 095_2039

Survey Summary

Survey Position: 055° 55' 19.460" N, 158° 51' 25.704" W

Least Depth: 6.27 m

Timestamp: 2005-220.20:40:04.997 (08/08/2005)

Survey Line: h11478 / 1016_reson8125_hvf / 2005-220 / 095_2039

Profile/Beam: 300/7

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Lidar Rk (FAU14) Verified. NE extent of New Foul Area. Many kelp covered Rks.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1016_reson8125_hvf/2005-220/095_2039	300/7	0.00	000.0	Primary
H11263_LidarInvestigations.xls	34	21.53	047.1	Secondary
h11478/1016_reson8125_hvf/2005-220/095_2039	178/68	27.53	057.3	Secondary (grouped)
H11263_LidarInvestigations.xls	17	263.86	052.7	Secondary (grouped)

Hydrographer Recommendations

Chart Lidar Rk at MB position and depth (6.27m). Chart New Foul Area.

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

6.2m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 6.271 m

Office Notes

Concur with clarification. Chart new foul area. Do not chart Lidar rock. Chart shoaler adjacent submerged 4.107m field verified rock found by multibeam at 55-55-17.956N, 158-51-30.349W.

1.42) Profile/Beam - 503/17 from h11478 / 1021_reson8101_hvf / 2005-221 / 020_2315

Survey Summary

Survey Position: 055° 55' 10.700" N, 158° 51' 30.930" W

Least Depth: 9.75 m

Timestamp: 2005-221.23:16:52.188 (08/09/2005)

Survey Line: h11478 / 1021_reson8101_hvf / 2005-221 / 020_2315

Profile/Beam: 503/17

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Lidar Rk Verified 35m WNW of Lidar Position, Shoal Sounding

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1021_reson8101_hvf/2005-221/020_2315	503/17	0.00	000.0	Primary
H11263_LidarInvestigations.xls	22	15.40	300.3	Secondary

Hydrographer Recommendations

Chart Lidar Rk at MB position and depth (9.75m)

Cartographically-Rounded Depth (Affected Charts):

5 ¼fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

9.7m (500_1, 50_1)

S-57 Data

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

Attributes: VALSOU - 9.752 m

Office Notes

Concur.

2 - AWOIS Features

2.1) Profile/Beam - 519/62 from h11478 / 1006_reson8101_hvf / 2005-231 / 012_1839

Primary Feature for AWOIS Item #53284

Search Position: 055° 53' 53.000" N, 158° 50' 55.000" W

Historical Depth: 7.32 m

Search Radius: 130

Search Technique: MB

Technique Notes: [None]

History Notes:

BP40352, 1945; Is a reconnaissance survey depicting a 4 fathom sounding north of Mitrofania Island in Lat. 55/53/53 N. Lon. 158/50/55 W. (NAD 83). The sounding was originally charted on 16013 and when 16561 was created the sounding was pulled forward from 16013 a smaller scale chart. This BP has many other sounding that were never applied to either16013 or 16561. A photo copy of the BP will be forwarded with the letter instructions depicting these soundings. (Entered by KRW 06/30/2005)

Survey Summary

Survey Position: 055° 54' 01.500" N, 158° 50' 40.038" W

Least Depth: 5.08 m

Timestamp: 2005-231.18:39:40.340 (08/19/2005)

Survey Line: h11478 / 1006_reson8101_hvf / 2005-231 / 012_1839

Profile/Beam: 519/62

Charts Affected: 16561_1, 16013_1, 16011_1, 16006_1, 500_1, 530_1, 50_1

Remarks:

Shoal sounding on AWOIS 53284. Feature is 350 m NE of CHD (16651) and AWOIS position. Feature is a large, kelp covered rock approximately 300m by 200m, rising abruptly from the seafloor. The feature was investigated with a dive and has 100% MB coverage.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11478/1006_reson8101_hvf/2005-231/012_1839	519/62	0.00	000.0	Primary
h11478/1006_reson8101_hvf/2005-220/176_2152	456/101	1.04	204.9	Secondary
h11478/dive/2005-221/08092005	1/1	1.04	204.9	Secondary
H11265_LidarInvestigation.xls	1	17.75	163.7	Secondary
H11265_LidarInvestigation.xls	3	94.42	253.0	Secondary (grouped)

H11265_LidarInvestigation.xls	2	112.62	075.0	Secondary (grouped)
OPR-P182-RA-05	AWOIS # 53284	368.81	044.5	Secondary (grouped)
H11265_LidarInvestigation.xls	4	376.65	047.2	Secondary (grouped)

Hydrographer Recommendations

Chart as Shoal Soundings

Cartographically-Rounded Depth (Affected Charts):

2 ¾fm (16561_1, 16013_1, 16011_1, 16006_1, 530_1)

5.1m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Do not concur. Chart as submerged rock.

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY - revised

DATE : January 10, 2006

HYDROGRAPHIC BRANCH: Pacific Hydrographic Branch
HYDROGRAPHIC PROJECT: OPR-P182-RA-2005
HYDROGRAPHIC SHEET: H11478

LOCALITY: Ivan Bay, Mitrofania Bay, AK
TIME PERIOD: July 19 to August 21, 2005

TIDE STATION USED: Sand Point, AK 945-9450
Lat. 55 19.9' N Long. 160 30.3' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.988 meters

TIDE STATION USED: Mitrofania Island, AK 945-9016
Lat. 55 53.4' N Long. 158 49.2' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.121 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SWA181

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).

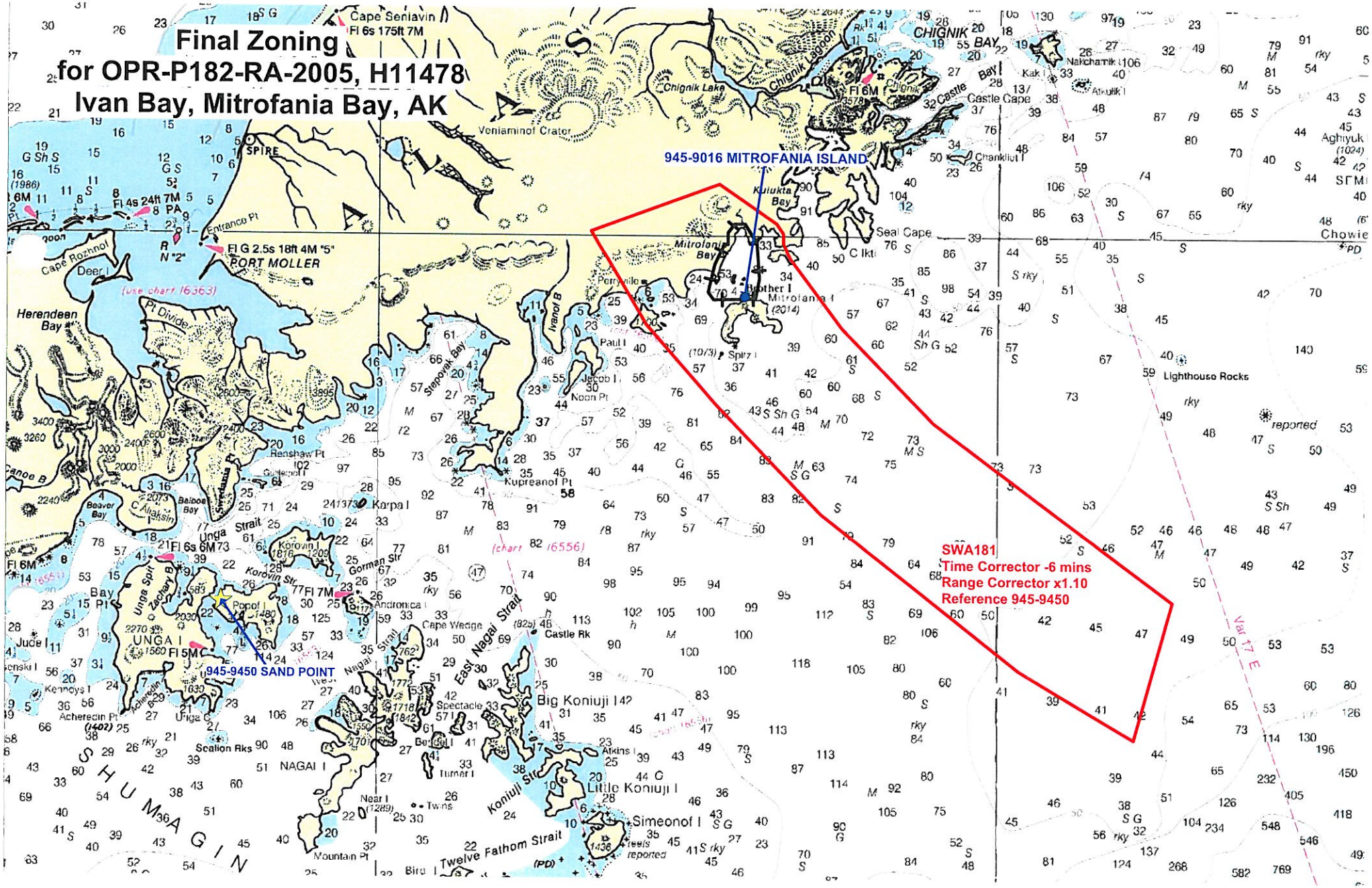
Note 2: Use tide data from the appropriate station with applicable zoning correctors for each zone according to the order in which they are listed in the Tidezone corrector file (*.ZDF). For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available.

CHIEF, PRODUCTS AND SERVICES DIVISION

Final tide zone node point locations for OPR-P182-RA-2005, H11478

Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone SWA181	945-9450	-6	1.10
-157.434421 55.337217	945-9016	0	1.00
-157.556936 55.084911			
-157.930575 55.210466			
-158.571047 55.495877			
-158.907942 55.693171			
-159.13617 55.839591			
-159.223754 55.922913			
-159.31513 56.008739			
-158.902585 56.094928			
-158.717544 56.023546			
-158.695693 56.005184			
-158.695213 55.986881			
-158.689734 55.980967			
-158.680795 55.968157			
-158.673346 55.9598			
-158.504524 55.833366			
-158.207958 55.662824			
-157.434421 55.337217			


Final Zoning
for OPR-P182-RA-2005, H11478
Ivan Bay, Mitrofania Bay, AK
945-9016 MITROFANIA ISLAND
945-9450 SAND POINT
SWA181
Time Corrector -6 mins
Range Corrector x1.10
Reference 945-9450
Cape Senlavin
Fl 6s 175ft 7M
Veniaminof Crater
CHIGNIK BAY
Chignik Lake
Chignik Lagoon
Castle Cape
Seal Cape
Mitrofania Bay
Kuiukta Bay
Entrance Pt
Fl G 2.5s 18ft 4M "5"
PORT MOLLER
Cape Roznhol
Herendeen Bay
Pt Divide
Deer I
Renshaw Pt
Kupreanof Pt
Karpa I
Unga Strait
UNGA I
Fl 5M
Popof I
Andronica I
Cape Wedge
Castle Rk
East Nagai Strait
Big Koniuji I
Little Koniuji I
Simeonof I
Atkins I
Spectacle
Scallon Rks
NAGAI I
Twelve Fathom Strait
Koniuji Str
Lighthouse Rocks
Var 17 E
SHUMAGIN

H11478 HCell Report

Katie Reser, Physical Scientist
Pacific Hydrographic Branch

Introduction

The primary purpose of the HCell is to directly update NOAA ENCs with new survey information in International Hydrographic Organization (IHO) format S-57. HCell compilation of survey H11478 utilized Office of Coast Survey HCell Specifications Version 3.0, May 2008 and HCell User Guide Version 1.1, June 2008. HCell H11478 will be used to update charts 16561, 1:80,000 (3rd Ed.; March 2007, NM 2/7/2009), 16556, 1:80,000 (5th Ed.; April 2006, NM 2/14/2009), 16013, 1:969,761 (30th Ed.; July 2006, NM 2/7/2009), 16011, 1:1,023,188 (37th Ed.; November 2007, NM 2/7/2009), 16006, 1:1,534,076 (35th Ed.; April 2008, NM 2/7/2009) and US4AK59M.

HCell H11478 contains a portion of LIDAR surveys H11262, H11263, H11264 and H11265 (figure 1). Seven soundings were digitized from the LIDAR smooth sheets. In areas where the LIDAR surveys are overlapped by H11478, only coincident soundings with shoaler depths from LIDAR are included H11478 HCell.

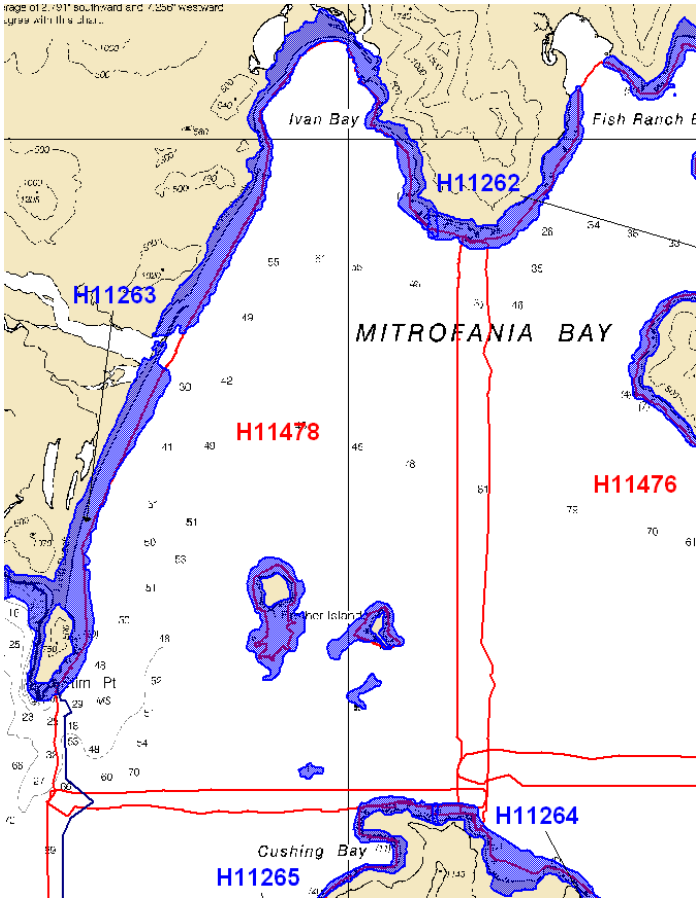


Figure 1. H11262, H11263, H11264, H11265 and H11478 survey coverage

1. Compilation Scale

The density of soundings in the HCell is compiled as appropriate to emulate those soundings of chart 16561, 1:80,000. Position and density of non-bathymetric features included in the HCell have not been generalized from the scales of the hydrographic surveys H11478, H11262, H11263, H11264 and H11265, 1:10,000.

2. Soundings

2.1 Source Data

A 10-meter resolution Combined BASE surface, **H11478_10m_Final_Combined,** was used as the basis for HCell production following Branch certification.

A survey-scale sounding (SOUNDG) feature object source layer was built from the **H11478_10m_Final_Combined** surface in CARIS BASE Editor. A shoal-biased selection was made at 1:20,000 scale using a radius table with values shown in **Table 1**.

Upper limit (m)	Lower limit (m)	Radius (mm)
0 10		3
10 20		4
20 50		4.5
50 175		5

Table 1

For the portions of H11262, H11263, H11264 and H11265 that are included in the survey, Smooth Sheets AT, AU, AW and AV were used as the basis for HCell production following Branch certification.

2.2 Sounding Feature Objects

In CARIS BASE Editor soundings were manually selected from the high density sounding layers from H11478 and imported into a new layer created to accommodate chart density depths. Manual selection was used to accomplish a density and distribution that more closely represents the seafloor morphology and that emulates density and distribution of soundings on chart 16561 than is possible using automated methods. See section 10.1, Data Processing Notes, for details about the use of manual sounding selection for H11478. The sounding feature object source layer was imported into the **H11478_HCell_Features.hob** file, which was used as a template to create the S-57 Composer product **H11478_CS.prd**.

3. Depth Areas

3.1 Source Data

Using the combined BASE surface **H11478_10m_Final_Combined** one depth area was generated. Additional depth contours at the intervals on the largest scale chart were

delivered per latest guidance from the 2009 Field Procedures Workshop. The depth contours are included in the **US411478_SS.000** file.

3.2 Depth Area Feature Objects

One depth range, 0 meters to 175 meters, was used for all depth area objects. Upon conversion to NOAA charting units, this depth range is 0 fathoms to 95.7 fathoms.

4. Meta Areas

The following Meta object areas are included in HCell 11478:

M_QUAL
M_COVR

Meta area objects were constructed on the basis of perimeter lines delineating the surveyed limits and extents of data gaps inside the survey area. These perimeters were first used to create the Skin of The Earth (SOTE) layer, then were duplicated to the Meta object layers and attributed per the H-Cell Specifications, ver. 3.0 and HCell User Guide ver. 1.1.

5. Survey Features

No DTONs were reported from H11478. Six DTONs were reported from LIDAR survey H11263 and one DTON was reported from H11265. The first DTON from H11263 is a 0ft rock awash located at 55-54-37.0008N, 158-49-51.5526W and is depicted on chart 16561. It was investigated during H11478 and the least depth was found to be -1fm and the rock covers and uncovers. The field verified rock is included in HCell H11478.

The second DTON from H11263 is a -0.6ft rock awash located at 55-55-23.6043N, 158-50-54.1931W and is not currently depicted on chart 16561. It was investigated and verified during H11478. The field verified rock is included in HCell H11478.

The third DTON from H11263 is a 2 ft submerged rock located at 55-55-03.9213N, 158-51-26.3934 and is not currently depicted on chart 16561. The rock was investigated and verified with multibeam and the least depth was found to be 4ft at 55-55-03.719N, 158-51-26.369W. The field verified rock is included in HCell H11478.

The fourth DTON from H11263 is a 2fm 2ft submerged rock located at 55-54-54.4015N, 158-51-14.3344W and is not currently depicted on chart 16561. The rock was investigated and verified with multibeam during H11478 and the least depth was found to be 2fm 3ft at 55-54-54.216N, 158-51-14.210W. The field verified rock is included in HCell H11478.

The fifth DTON from H11263 is a -2ft rock that covers and uncovers located at 55-55-08.49984N, 158-51-06.2809W and is not currently depicted on chart 16561. It was investigated during H11478 and the least depth was found to be -3ft. The field verified rock is included in HCell H11478.

The sixth DTON from H11263 is a 2fm 1ft submerged rock located at 55-54-53.3333N, 158-49-35.9135W and is not currently depicted on chart 16561. It was investigated and verified with multibeam during H11478 and the least depth was found to be 4ft at 55-54-53.097N, 158-49-35.343W. The field verified rock is included in HCell H11478.

The DTON reported from H11265 is a 0.6ft rock awash located at 55-54-02.04N, 158-50-40.32W and is depicted on chart 16561. The rock was investigated and verified with multibeam during H11478 and the least depth was found to be 2fm 4ft located at 55-54-01.500N, 158-50-10.038W. The field verified rock is included in HCell H11478.

H11478 contains one AWOIS item. The AWOIS item was located at 55-54-01.500N, 158-50-10.038W, coincident with the DTON reported from H11265. The rock has a multibeam verified least depth of 2fm 4ft. The submerged rock is included in HCell H11478.

Nine bottom samples were collected with H11478 and are included in the HCell. One bottom sample from ENC US4AK59M was retained and included in the HCell.

The source of all features included in the H11478 HCell can be determined by the SORIND or SORDAT field. For the rock/islet determination, the Tide Note value for MHW (-2.121 meters) was used. LIDAR data cannot be used to disprove charted features since it cannot meet the object detection requirements in the NOS Hydrographic Surveys Specifications and Deliverables. Only multibeam data and shoreline verification were used to disprove charted features. All features to be included in the HCell were addressed and de-conflicted in BASE Editor and imported into the **H11478_HCell_Features.hob** file, which was used as a template to create the S-57 Composer product **H11478_CS.prd**.

Shoreline Features

Shoreline features for H11478 were delivered in seven MapInfo tables and a Pydro PSS. There is some redundancy of features between the files.

- H11478 _CFF_Shoreline.tab (Features to be retained as depicted in the source shoreline file)
- H11478_CFF_RKS.tab (Rocks to be retained as depicted in the source shoreline file)
- H11478_CHD_Shoreline.tab (Charted shoreline used for reference or when source data was not available)
- H11478_CHD_Rocks.tab (Charted rocks used for reference or when source data was not available)

- H11478_PSSFEATURES.tab (New shoreline features or modified source features)
- H11478_Shoreline_Updates.tab (New shoreline features or modified source features)
- H11478_ShorelineNotes.tab (Field notes about source features, charted features and verified features)

Shoreline point features in Pydro were given S-57 attribution and exported to an xml file. The xml file was imported into CARIS Notebook via the Pydro Data Import utility. H11478_Pydro_Features.hob was generated from this process and used to update and de-conflict shoreline data.

Shoreline line/area features were derived from the MapInfo tables described above. The tables were exported to dxf files and opened in CARIS Base Editor. The line/area features to be included in the HCell were digitized from the dxf files.

6. Shoreline / Tide Delineation

Depth areas (DEPARE) were created for all SOTE features.

7. Attribution

All S-57 Feature Objects have been attributed as fully as possible based on information provided by the Hydrographer and in accordance with OCS H-Cell Specifications, ver. 3.0 and HCell User Guide ver. 1.1.

8. Layout

8.1 CARIS S-57 Composer Scheme

SOUNDG	Chart scale soundings
DEPARE	Group 1 objects (Skin of the Earth)
COALNE	CFF mean high water line
LNDARE	Islet features
LNDELV	Height attribute for point islet features
UWTROC	Rock features
OBSTRN	Foul areas
WEDKLP	Kelp features
SBDARE	Bottom samples and rocky seabed areas
M_COVR	Data coverage meta object
M_QUAL	Data quality meta object
$CSYMB	Blue notes

8.2 Blue Notes

Notes regarding data sources are in S-57 Composer as a $CSYMB feature with the blue note located in the INFORM field and the survey registry number, chart number, chart edition and edition date located in the NINFOM field. The blue notes are included in the HCell when it is exported to .000. The blue notes are also included as a separate ASCII file **H11478_Bluenotes.txt**.

9. Spatial Framework

9.1 Coordinate System

All spatial map and base cell file deliverables are in an LLDG geographic coordinate system, with WGS84 horizontal, MHW vertical, and MLLW (1983-2001 NTDE) sounding datums.

9.2 Horizontal and Vertical Units

During creation of sounding sets in CARIS BASE Editor, and creation of the HCell in CARIS S-57 Composer, units are maintained as metric with millimeter resolution. NOAA rounding is applied at the same time that conversion to chart units is made to the metric HCell base cell file, at the end of the HCell compilation process.

A CARIS environment variable, uslXsounding_round, controls the depth at which rounding occurs. Setting this variable to NOAA fathoms and feet displays all soundings from 0 to equal to or greater than 11 fathoms as whole units.

In an ENC viewer fathoms and feet display in the format X**.**YZZZ, where X is fathoms, Y is feet, and ZZZ is decimals of the foot. For fathoms and feet between 0 and 10 fathoms 4.5 feet (10.75 fms), soundings round to the deeper foot if the decimals of the foot are X**.**Y75000 or greater. For fathoms and feet deeper or equal to 11 fathoms, soundings round to the deeper fathom if feet and decimals of the foot are X**.**45000 (X**.**Y75000) or greater. Drying heights are in feet and are rounded using arithmetic methods. In an ENC viewer, heights greater than 6 feet will register in fathoms and feet using the above stated rules.

S-57 Composer Units

Sounding Units:	Meters rounded to the nearest millimeter
Spot Height Units:	Meters rounded to the nearest meter

Chart Unit Base Cell Units

Depth Units (DUNI):	Fathoms and feet
Height Units (HUNI):	Feet (or fathoms and feet above 6 feet)
Positional Units (PUNI):	Meters

10. QA/QC

10.1 Data Processing Notes

Manual chart scale sounding selections were made for this survey. Experience has shown that in areas where bathymetry is steep sided, as in the case of this extremely steep edged fjord, automated sounding selection is impractical. None of the default sounding suppression options offered in CARIS BASE Editor or S-57 Composer yields an acceptable density and distribution of depths, generally bunching soundings nearshore with too sparse coverage seaward. While the customized options are more practical for this type of terrain, an inordinate amount of time must be spent in experimentation with variations on the algebraic terms in order to devise the most suitable formula, and manual adjustments are still required to the resulting sounding set.

10.2 ENC Validation Checks

H11478 was subjected to QA and Validation checks in S-57 Composer prior to exporting to the HCell base cell (000) file. Full millimeter precision was retained in the export of the metric S-57 base cell data set. This data set was converted to a chart unit 000 file. dKart Inspector 5.1 was then used to further check the data set for conformity using the S-58 ver. 2 standard (formerly Appendix B.1 Annex C of the S-57 standard). All tests were run and errors investigated and corrected where necessary.

11. Products

11.1 HSD, MCD and CGTP Deliverables

- H11478 Base Cell File, Chart Units, Soundings compiled to 1:80,000
- H11478 Base Cell File, Chart Units, Soundings compiled to 1:20,000
- H11478 Descriptive Report including end notes compiled during office processing and certification
- H11478 HCell Supplemental Report
- H11478 Blue Notes ASCII file

11.2 File Naming Conventions

S-57 Composer Product prefix: *H11478_CS.prd and H11478_SS.prd*

MCD Chart units base cell file: *US411478_CS.000*

MCD Chart units base cell file, survey scale soundings: *US411478_SS.000*

11.3 Software

HIPS 6.1:	Management and inspection of Combined BASE surfaces
BASE Editor 2.1: S-57	Combination of Product Surfaces and initial creation of the bathymetry-derived features
CARIS Notebook 3.0:	Management and inspection of shoreline files
S-57 Composer 2.0:	Assembly of the HCell, S-57 products export, QA
HOM 3.3:	Assembly of the HCell, S-57 products unit conversion and sounding rounding
GIS 4.4a:	Setting the sounding rounding variable
Pydro v7.3 (r2252)	Creation of Feature and DTON reports
dKart Inspector 5.1:	Validation of the base cell file

12. Contacts

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

Katie Reser, Physical Scientist, PHB, Seattle, WA; 206-526-6864;
Katie.Reser@noaa.gov.

APPROVAL SHEET
H11478

Initial Approvals:

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

Katie J. Reser

Katie Reser
2009.03.23
12:10:22 -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.

Gary C. Nelson

Gary C. Nelson
2009.03.23
14:20:28 -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.

Charles R. Davies

Digitally signed by Charles R. Davies
DN: cn=Charles R. Davies, c=US, o=Pacific Hydrographic Branch, ou=NOAA,NOS,OCS, email=Russ.Davies@NOAA.GOV
Date: 2009.03.23 14:03:02 -07'00'

Digitally signed by Erin Nagel
DN: cn=Erin Nagel, o=NOAA, ou=NOAA-HSD-OCS, email=Erin.Nagel@noaa.gov, c=US
Reason: AWOIS & SURF Check Complete
Date: 2009.03.24 15:28:48 -04'00'