H11066

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-40-03-01

Registry No. H-11066

LOCALITY

State Alaska

General Locality SW Alaska Peninsula and Semidi Is.

Sublocality Offshore - South of Nakchamik Island

2001

CHIEF OF PARTY

Captain James C. Gardner, 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

H-11066

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-40-03-01

State **Alaska**

General Locality **Southwest Alaska Peninsula and Semidi Islands**

Sublocality **Offshore - South of Nakchamik Island**

Scale **1:40,000** Date of Survey **7/20/01 - 8/8/01**

Instructions Date **6/1/2001** Project No. **OPR-P182-RA-01**

Change #1 dated 6/12/01, #2 dated 7/6/01,and #3 dated 7/27/01

Vessel **RAINIER (2120), Launches (2121), (2122), (2123), (2124), (2126)**

Chief of Party **Captain J. C. Gardner, NOAA**

Surveyed by **Ship personnel and physical scientists from Pacific Hydrgraphic Branch**

Soundings taken by echo sounder, hand lead, pole **SB 1050D, SB 1180, RESON 8101**

Graphic record scaled by **RAINIER Personnel**

Graphic record checked by **RAINIER Personnel**

Evaluation by **Gary C. Nelson** Automated plot by **HP DesignJet 750C**

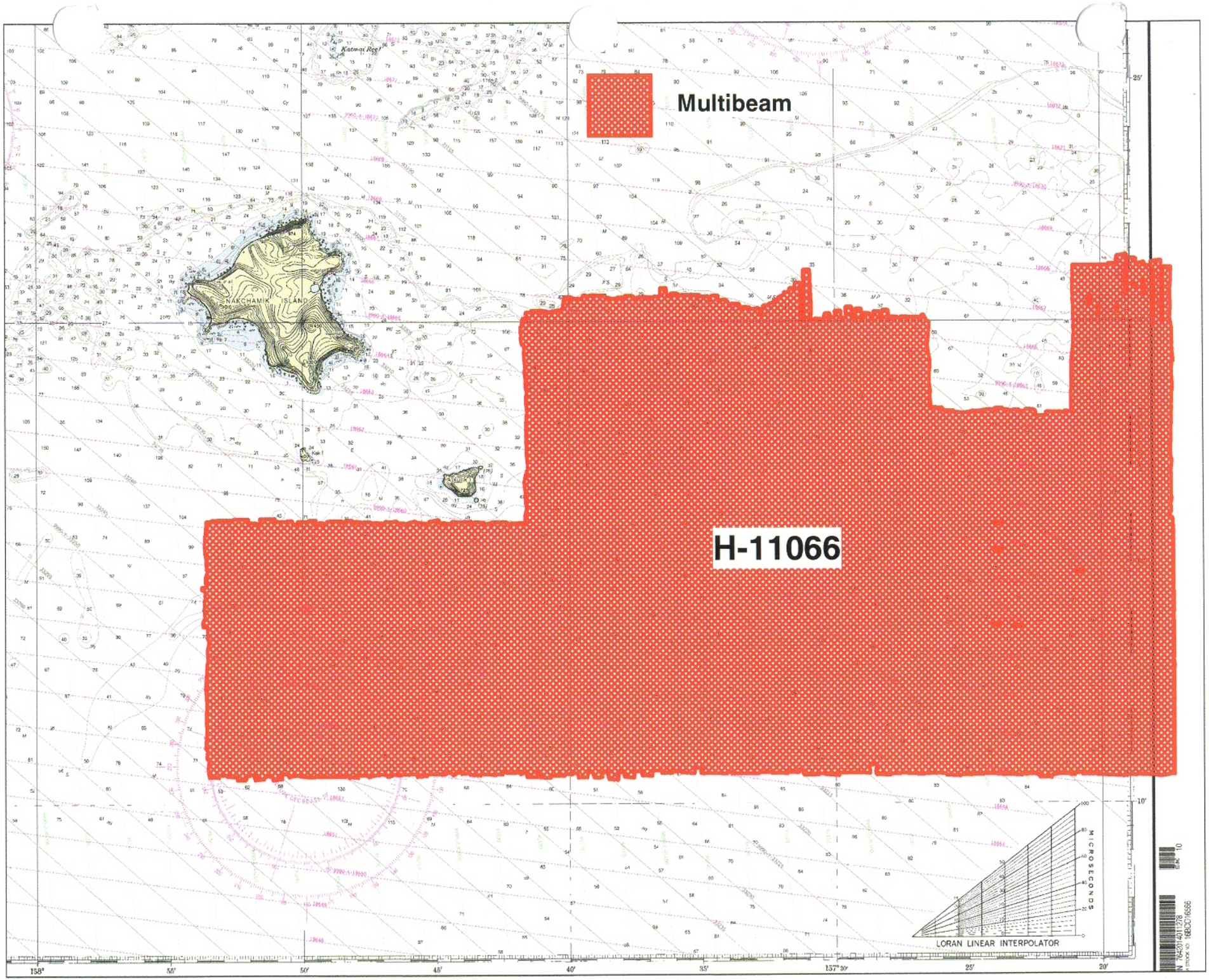
Verification by **L. Deodato, R. Davies, R. Mayor**

Soundings in **Fathoms** at **MLLW**

REMARKS: **Time in UTC**

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

All depths listed in this report are referenced to mean lower low water unless otherwise noted.


Multibeam
H-11066
NAKCHAMIK ISLAND
Katmai Reef
LORAN LINEAR INTERPOLATOR
MICROSECONDS
158°
55'
50'
45'
40'
35'
157° 30'
25'
20'
25'
10'

Descriptive Report to Accompany Hydrographic Survey H11066

Project OPR-P182-RA-01
Southwest Alaska Peninsula
Scale 1:40,000
July-August 2001
NOAA Ship RAINIER
Chief of Party: Captain James C. Gardner, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P182-RA-01, dated June 1, 2001, with changes through July 27, 2001[1], and the Draft Standing Project Instructions dated April 6, 1998. The purpose of this project is to provide contemporary surveys for updating National Ocean Service (NOS) nautical charts. Many charted features in the project area originate from observations made prior to 1897. Sparse hydrographic data is from 1924-1943 track line reconnaissance surveys and lead-line hydrographic surveys. This project responds to requests from a U.S. Congressman, a U.S. Senator, the domestic commercial fishing industry, the United States Coast Guard, and NOAA, who emphasize concern about chart adequacy and safe navigation in offshore regions of the Alaska Peninsula.

The survey area (see Figure 1) is located on the east coast of the Alaska Peninsula, offshore south of Nakchamik Island, approximately twenty nautical miles southeast of Chignik Bay, extending to the east of Chankliut island. The survey's northern approximate limit is latitude 56°21'18"N and the southern limit is approximate latitude 56°12'22"N[2]. The survey's western limit is approximate longitude 157°41'43"W[3] and the eastern limit is approximate longitude 157°17'13"W. Due to time constraints during the survey project, only the northeastern section of the original sheet layout was completed. The Hydrographer recommends revising the sheet layout to the south of latitude 56°12'22"N[4] and to the west of longitude 157°41'43"W[5] for survey in the future. One hundred percent shallow-water multibeam (SWMB) coverage was obtained in the survey area, with the exception of the NE corner of the survey in which there is overlap with contemporary survey H10554 (OPR-P180-RA, July-Aug 1994).

Data acquisition was conducted from July 20 to August 8, 2001 (DN 201 to 220).

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-01 Data Acquisition and Processing Report*, submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Data were acquired by RAINIER and her survey launches (vessel numbers 2120, 2121, 2122, 2123, 2124, and 2126). Vessels 2120, 2121, 2123, 2124 and 2126 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. Vessel 2122 was used to collect bottom samples, and sound velocity casts on DN 205. No unusual vessel configurations or problems were encountered during this survey.

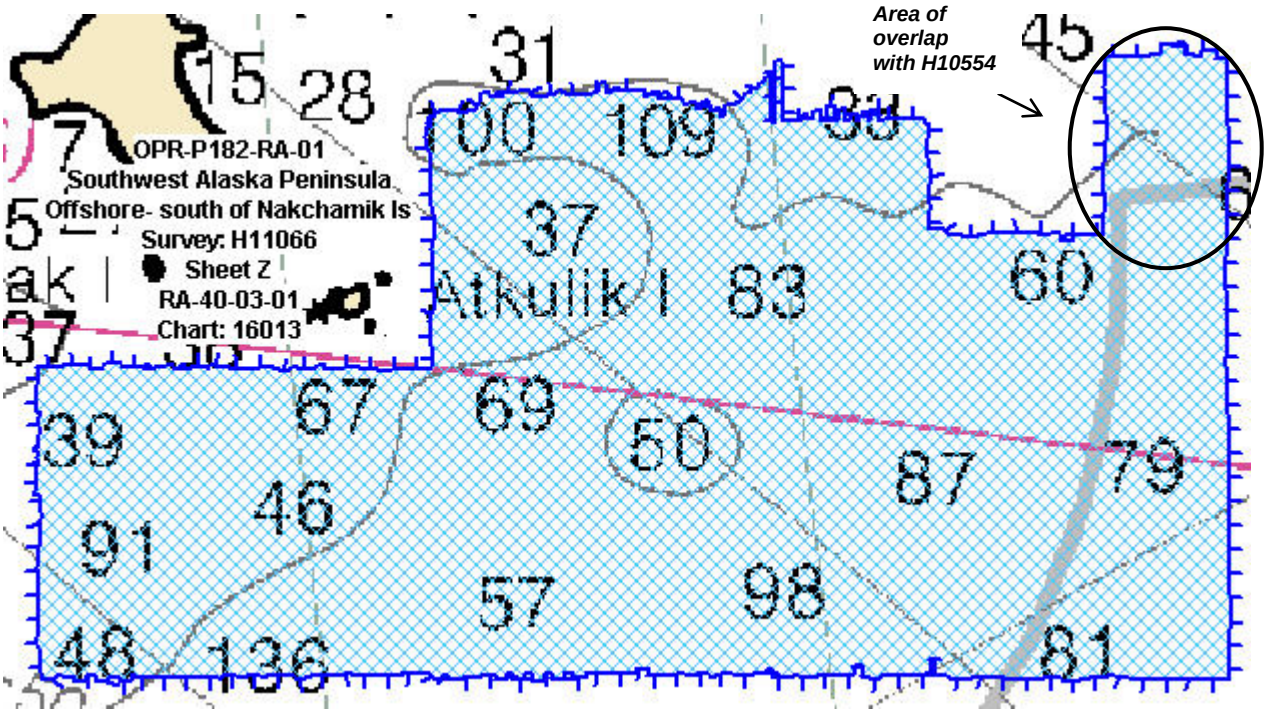


Figure 1. H11066 Survey Limits.

B2. Quality Control

Crosslines

Shallow-Water Multibeam (SWMB) crosslines totaled 62.93 nautical miles, comprising 5.93% of SWMB hydrography. The Quality Control Report (QCR, CARIS HIPS) for the checkline file averaged 76.76%, with a depth tolerance factor of 0.013, which conforms to International Hydrographic Organization Order 1 specifications detailed in Special Publication S-44, Edition 4, as well as NOS Hydrographic Surveys Specifications and Deliverables Manual. See Appendix V[6] for the detailed report.

Low QCR agreement can be attributed to the steep bathymetry and numerous pinnacles in the survey area. The Hydrographer believes through manual examination of the data the accuracy standards have been met and crossline agreement is good.[7]

Junctions

The following contemporary surveys junction with H11066 (see also Figure 2.):[8]

Registry #	Scale	Date	Junction side
H11065	1:10,000	2001	Northwest
H10696	1:20,000	1998	North
H10554	1:40,000	1994	Northeast

Processing of survey H11065 was not completed prior to submittal of survey H11066. Junction comparisons will be discussed in the Descriptive Report for H11065.

Survey H10696 junctions with the north side of this survey. Soundings were generally in agreement with average differences of zero to three fathoms. Additionally, survey soundings were shoaler between H10696 smooth sheet soundings even though agreement at the position of the soundings was good. This can be attributed to increased bottom coverage using SWMB methods.[9]

Vertical-beam echo sounder survey H10554, conducted by the NOAA Ship RAINIER in 1994, junctions with the northeast corner of this survey. Soundings were generally in agreement with average differences of one to five meters (survey H10554 is plotted in meters) where multibeam soundings from H11066 overlay the vertical beam echo sounder smooth sheet soundings from H10554. Additionally, survey soundings were shoaler between H10554 smooth sheet soundings even though agreement at the position of the soundings was good. This can be attributed to increased bottom coverage using SWMB methods.[10]

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[11]

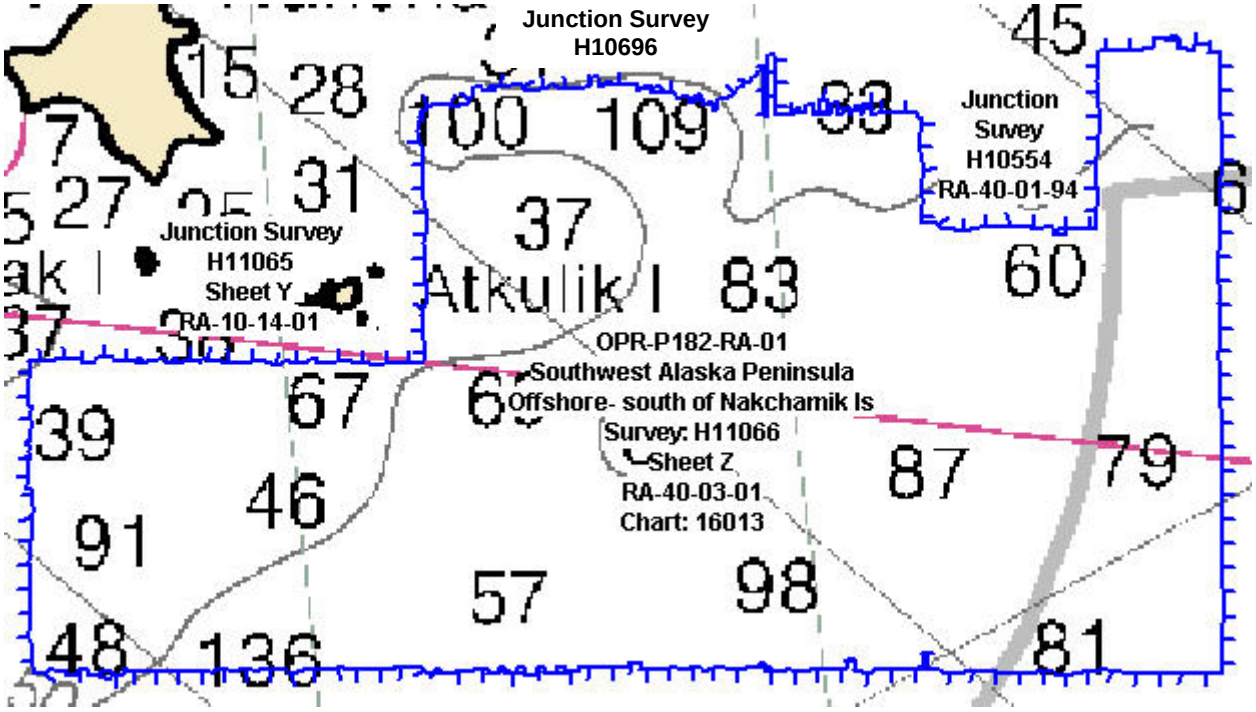


Figure 2. H11066 Junction Surveys.

Data Quality Factors

During processing of H11066 several sounding lines (vessel 2120, DN 203, 216, 217, and 219) were noticed to have "stuck" analog pitch data, where the value of the pitch remained constant or nearly constant. Backup digital pitch data was not available to correct the pitch (refer to the *OPR-P182-RA-01 Data Acquisition and Processing Report* for information on logging of vessel attitude data). However, agreement was good between adjacent lines and crosslines which did not have "stuck" pitch. These data were collected on relatively calm days where the vessel was not subject to much pitching. The Hydrographer believes through manual examination of the data that the accuracy standards have been met and the effects of the stuck pitch are minimal.[12]No other unusual conditions were encountered during the survey that affected the expected accuracy and quality of survey data.[13]

B3. Data Reduction

All data reduction procedures for survey H11066 conform to those detailed in the *OPR-P182-RA-01 Data Acquisition and Processing Report.*

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11066 can be found in the *OPR-P182-RA-01 Horizontal and Vertical Control Report*, 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. Differential corrections from U.S. Coast Guard beacon at Kodiak, AK (313 kHz) and Cold Bay, AK (289 kHz) were utilized during this survey. Launch-to-launch DGPS performance checks were performed weekly in accordance with Section 3.2 of the FPM. Copies of the performance checks are included in the *OPR-P182-RA-01 Horizontal and Vertical Control Report*.

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) will serve as control for datum determination and as the primary source for water level reducers for survey H11066. The contractor LCMF installed and maintained the following subordinate tide gauge stations in accordance with the Project Instructions:

Station Name	**Station #**	Latitude	Longitude	Installed & Maintained
Chowiet Island, AK	9458519	56° 03.0’ N	156° 42.5’ W	LCMF (contractor)
Chankliut Island, AK	9458849	56° 08.8’ N	158° 06.4’ W	LCMF (contractor)
Castle Bay, AK	9458907	56° 13.9’ N	158° 20.6’ W	LCMF (contractor)

HDCS sounding data were reduced to mean lower-low water (MLLW) using unverified observed tides from station Sand Point, AK (945-9450), adjusted using a height ratio corrector of 1.26 and a time corrector of minus 3 minutes. These data were used in creating the tide corrector file "H11066_Observed.tid" which was applied in CARIS. Bottom Sample data depths have no water level correctors applied. No other detached positions were taken during survey H11066 which required water level correctors.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. A request for delivery of final approved (smooth) tides for survey H11066 was forwarded to N/OPS1 on August 10, 2001 in accordance with FPM 4.8.[14]

D. RESULTS AND RECOMMENDATIONS

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

No AWOIS items were located within the limits of H11066.[15]

D.2 Chart Comparison

Survey H11066 was compared with chart 16566 (10th Ed.; February 20, 1999, 1:77,477), chart 16013 (28th Ed.; April 14, 2001, 1:969,761), and chart 16006 (33rd Ed., December 23, 2000, 1:1,534,076).

Chart 16566

Depths from survey H11066 were generally one to five fathoms shoaler than depths on chart 16566, with a few instances in which survey soundings were up to 8 fathoms shoaler than charted soundings at the position of the charted sounding. In many instances, this survey found shoaler soundings between charted soundings even though agreement at the position of the charted depths was good. These differences are all likely attributable to increased bottom coverage using SWMB.[16] Numerous pinnacles and steep slopes were in the survey area, resulting in survey depths that are from 4 to 28 fathoms shoaler than charted depths in these areas.[17]

In the vicinity of a charted 27-fathom sounding, the present survey revealed a least depth of 30 fathoms at 56°20'07.349"N, 157°41'31.837"W (580,855.6E, 6,244,175N). This sounding is at the limit of hydrography for H11066, and junctioning survey H10696 had a 26[18]-fathom sounding in this area. The Hydrographer recommends charting the 26[19]-fathom sounding from H10696.[20]

Chart 16013

Depths from survey H11066 generally agreed with the sparse soundings on chart 16013. In many instances, this survey found shoaler soundings between charted soundings even though agreement at the position of the charted depths was good. This can be attributed to increased bottom coverage using SWMB methods.[21] Numerous pinnacles and steep slopes were in the survey area, resulting in survey depths that are up to 28 fathoms shoaler than the closest charted soundings along these areas.[22]

Chart 16006

Depths from survey H11066 generally agreed with the sparse soundings on chart 16006. In many instances, this survey found shoaler soundings between charted soundings even though agreement at the position of the charted depths was good. This can be attributed to increased bottom coverage using SWMB methods.[23] Numerous pinnacles and steep slopes were in the survey area, resulting in survey depths that are up to 13 fathoms shoaler than the nearest charted depths along these areas.[24]

The Hydrographer has determined that data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas.[25]

Final chart comparisons will be made at the Pacific Hydrographic Branch after the application of smooth tides.[26]

D.3 Shoreline

No shoreline was located within the limits of H11066.[27]

D.4 Dangers to Navigation

No dangers to navigation (DTONs) were found during survey H11066.[28]

D.5 Aids to Navigation

No aids to navigation (ATONs) were located within the limits of H11066.[29]

D.6 Miscellaneous[30]

Bottom samples were collected and recorded in Hypack. The bottom sample positions and characteristics are depicted on the Final Field Sheet, in both paper copy and MapInfo format. Two bottom samples were collected outside of the limits of SWMB.

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition, Hydrographic Survey Guidelines, Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2001.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H11066 is complete and adequate to supersede charted soundings in their common areas. No additional work is required for this survey.[31]

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-01	August 13, 2001	N/CS34
Horizontal and Vertical Control Report for OPR-P182-RA-01	August 13, 2001	N/CS34
Coast Pilot Report for OPR-P182-RA-01	TBD	N/CS26

Approved and Forwarded: James C Gardner Date: 1-25-02
James C. Gardner
Captain, NOAA
Commanding Officer

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

Survey Sheet Manager: Lynnette V. Morgan
Lynnette V. Morgan
Survey Technician, NOAA

Field Operations Officer: E. J. Van Den Ameele
Edward J. Van Den Ameele
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

[1] PHB Revision-- Include change nos. and dates; Change #1 dated 6/12/01, #2 dated 7/6/01, #3 dated 7/27/01
[2] PHB Revision-- Revise GP to 56°10’30”N
[3] PHB Revision-- Revise GP to 157°53’40”W
[4] PHB Revision-- Revise GP to 56°10’30”N
[5] PHB Revision-- Revise GP to 157°53’40”W
[6] Filed wit the hydrographic data
[7] Concur
[8] All of the junction surveys listed have been applied to the current edition of the chart. The evaluator recommends superceding the chart with H11066 within the common area.
[9] Concur
[10] Concur
[11] See endnote 8
[12] Concur
[13] Concur
[14] Approved tide note dated March 27, 2002 is attached
[15] Concur
[16] Concur
[17] Concur
[18] PHB Revision-- Revise sounding to 27
[19] PHB Revision-- Revise sounding to 27
[20] Do not concur—Charted 27 fm sounding is correct and originates from H10696
[21] Concur
[22] Concur
[23] Concur
[24] Concur
[25] Concur
[26] In general H11066 agreed well with the charted soundings. However, numerous shoaler soundings up to 15 fathoms were noted. This can be attributed to the sparseness of coverage on the chart and the use of SWMB. The evaluator recommends superceding the chart with H11066 within the common area.
[27] Concur
[28] Concur
[29] Concur
[30] Bottom samples were not collected in areas deeper than 50 fathoms. Bottom samples from H4509 (1925) were portrayed on the smooth sheet in these areas. The bottom samples were carried through to the Hdrawing in their surveyed position.
[31] Concur

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 27, 2002

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P182-RA-2001
HYDROGRAPHIC SHEET: H11066 (Revision)

LOCALITY: Southwest Alaska Peninsula, AK
TIME PERIOD: July 20 - August 8, 2001

TIDE STATION USED: 945-8519 Chowiet Island, AK
Lat. 56° 03.1'N Lon. 156° 41.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.485 meters

TIDE STATION USED: 945-8849 Chankliut Island, AK
Lat. 56° 08.7'N Lon. 158° 06.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.367 meters

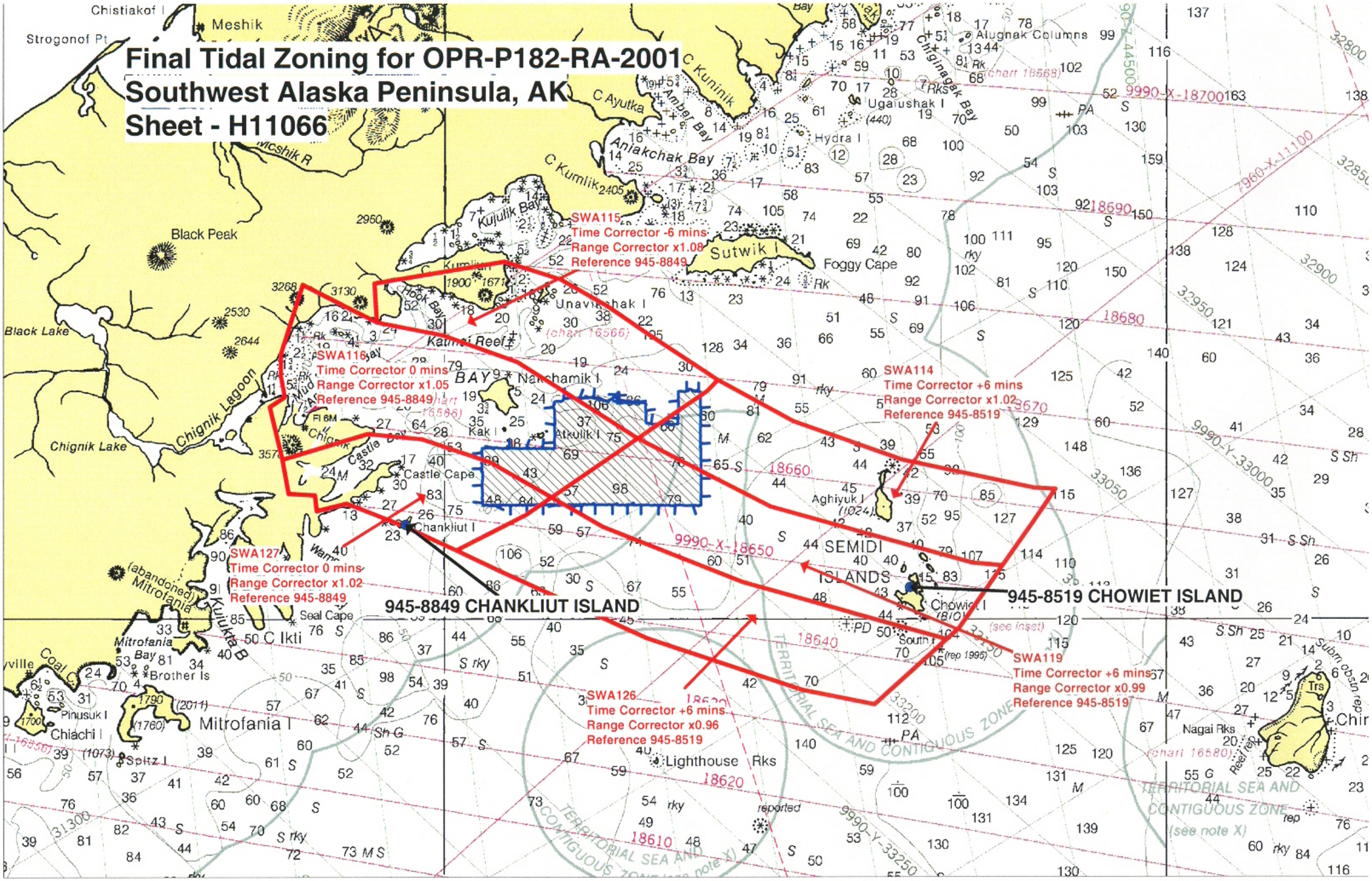
REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SWA114, SWA115, SWA116, SWA119, SWA126, & SWA127.

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.

For

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION


Final Tidal Zoning for OPR-P182-RA-2001
Southwest Alaska Peninsula, AK
Sheet - H11066
SWA115
Time Corrector -6 mins
Range Corrector x1.08
Reference 945-8849
SWA116
Time Corrector 0 mins
Range Corrector x1.05
Reference 945-8849
SWA127
Time Corrector 0 mins
Range Corrector x1.02
Reference 945-8849
945-8849 CHANKLIUT ISLAND
SWA114
Time Corrector +6 mins
Range Corrector x1.02
Reference 945-8519
945-8519 CHOWIET ISLAND
SWA119
Time Corrector +6 mins
Range Corrector x0.99
Reference 945-8519
SWA126
Time Corrector +6 mins
Range Corrector x0.96
Reference 945-8519
Black Peak
Chignik Lake
Black Lake
Chignik Lagoon
Sutwik I
Foggy Cape
SEMIDI
ISLANDS
Mitrofania I
Castle Cape
Lighthouse Rks
TERRITORIAL SEA AND CONTIGUOUS ZONE

Final tide zone node point locations for **OPR-P182-RA-2001, Sheet H11066.**

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 SWA114			
-157.241858 56.370111	945-8519	+6	1.02
-157.271849 56.353122			
-157.463905 56.279948			
-157.095579 56.174362			
-156.535086 56.0872			
-156.453487 56.083477			
-156.368298 56.151019			
-156.30685 56.201619			
-156.366023 56.203353			
-156.730153 56.246814			
-157.032765 56.306289			
-157.241858 56.370111			
Zone SWA115			
-157.678646 56.524773	945-8849	-6	1.08
-157.832699 56.551793			
-158.192709 56.51872			
-158.185932 56.458642			
-158.001591 56.438608			
-157.797065 56.397724			
-157.611337 56.332309			
-157.463905 56.279948			
-157.271849 56.353122			
-157.241858 56.370111			
-157.440742 56.442965			
-157.547333 56.483638			
-157.678646 56.524773			
Zone SWA116			

-157.463905 56.279948	945-8849	0	1.05
-157.611337 56.332309			
-157.797065 56.397724			
-158.001591 56.438608			
-158.185932 56.458642			
-158.390942 56.516782			
-158.451602 56.410008			
-158.451315 56.376112			
-158.44083 56.343794			
-158.482054 56.328704			
-158.447246 56.247319			
-158.21176 56.28666			
-158.061374 56.278696			
-157.872073 56.242919			
-157.70266 56.188715			
-157.463905 56.279948			
Zone SWA119			
-156.453487 56.083477	945-8519	+6	0.99
-156.535086 56.0872			
-157.095579 56.174362			
-157.463905 56.279948			
-157.70266 56.188715			
-157.561336 56.143358			
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-156.573673 55.986595			
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Zone SWA126			
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-157.846555 56.074959			
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-156.806844 55.86912			
-156.607631 55.969471			
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-157.561336 56.143358			
-157.70266 56.188715			
Zone SWA127			
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-157.872073 56.242919			

-158.061374 56.278696
-158.21176 56.28666
-158.447246 56.247319
-158.430272 56.19459
-158.357095 56.192143
-158.352707 56.167654
-158.270381 56.179384
-158.118958 56.146102
-157.966354 56.106955
-157.773372 56.161757
-157.70266 56.188715

APPROVAL SHEET
H11066

Initial Approvals:

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

Gary C. Nelson Date: 5/2/2005

Gary C. Nelson
Cartographic Team Leader
Pacific Hydrographic Branch

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

, CDR/NOAA Date: 3 MAY 05

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

Kyle R. Ward

Digitally signed by Kyle R. Ward
DN: CN = Kyle R. Ward, C = US, O = HSD, OU = OPS
Reason: AWOIS and SURF check
Date: 2005.05.06 14:44:55 -04'00'

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-11066

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16566	5/23/02	[signature]	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. Application of soundings and features from smooth sheet.
~~16013~~	~~6/7/02~~	~~[signature]~~	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. ~~Application of soundings and features from smooth sheet and thru chart 16566.~~ [initials]
			Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
16587	4/30/05	Gary C. Nelson	Drawing No. APPLICATION AND FEATURES FROM SMOOTH SHEET
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.