

H11502

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
<i>Type of Survey</i>	HYDROGRAPHIC
<i>Field No.</i>	
<i>Registry No.</i>	H11502
LOCALITY	
<i>State</i>	GEORGIA
<i>General Locality</i>	WASSAW SOUND
<i>Locality</i>	ENTRANCE OF WASSAW SOUND TO 4.5 NM EAST OF WASSAW ISLAND 2005
CHIEF OF PARTY DAVID B. ELLIOTT - TEAM LEADER	
LIBRARY & ARCHIVES	
DATE	

NOAA FORM 77-28 U.S. DEPARTMENT OF COMMERCE
(11-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTRY NUMBER:

H11502

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 NUMBER: N/A

State/Territory: **Georgia**
General Locality: **Wassaw Sound**
Sub-Locality: **Wassaw Sound to 4.5 NM East of Wassaw Island**
Scale: 1:10,000 Date of Survey: 7-19-05 (DN 200) – 10-18-05 (DN291)
Instructions Dated: Feb 25, 2005 Project Number: **OPR-G381-NRT2-04**
Vessel: **NOAA Launch 1210**
Chief of Party: **David B. Elliott - Team Leader**
Surveyed by: **David Elliott, Robert Ramsey & Laurie Brennan (NRT2)**
Soundings by: **Innerspace 455**
Graphic record scaled by: **DE, RR, LB**
Graphic record checked by: **DE, RR, LB**
Protracted by: N/A Automated Plot: **HP-1050C plus**
Verification by: **Atlantic Hydrographic Branch**
Soundings in: ~~Meters~~ **Feet** at MLLW **Charted depths in feet at MLLW.**

Remarks:

- 1) *All Times are UTC.*
- 2) *This is a basic Hydrographic Survey under the Navigable Area Concept.*
- 3) *Projection is UTM Zone 17.*

Bold italic red notes in the Descriptive Report were made during office processing.

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DESCRIPTIVE REPORT

to accompany

OPR-G381

HYDROGRAPHIC SURVEY

H11502

Year of Survey: 2005

Navigation Response Team 2 - Launch 1210

David B. Elliott- Team Leader

A. AREA SURVEYED

This Field Examination survey was conducted in accordance with Port Letter Instructions for project OPR-G381-NRT-04, Savannah River, Georgia. The instructions are dated Feb. 25, 2005 and Change No. 1 dated March 23, 2005.

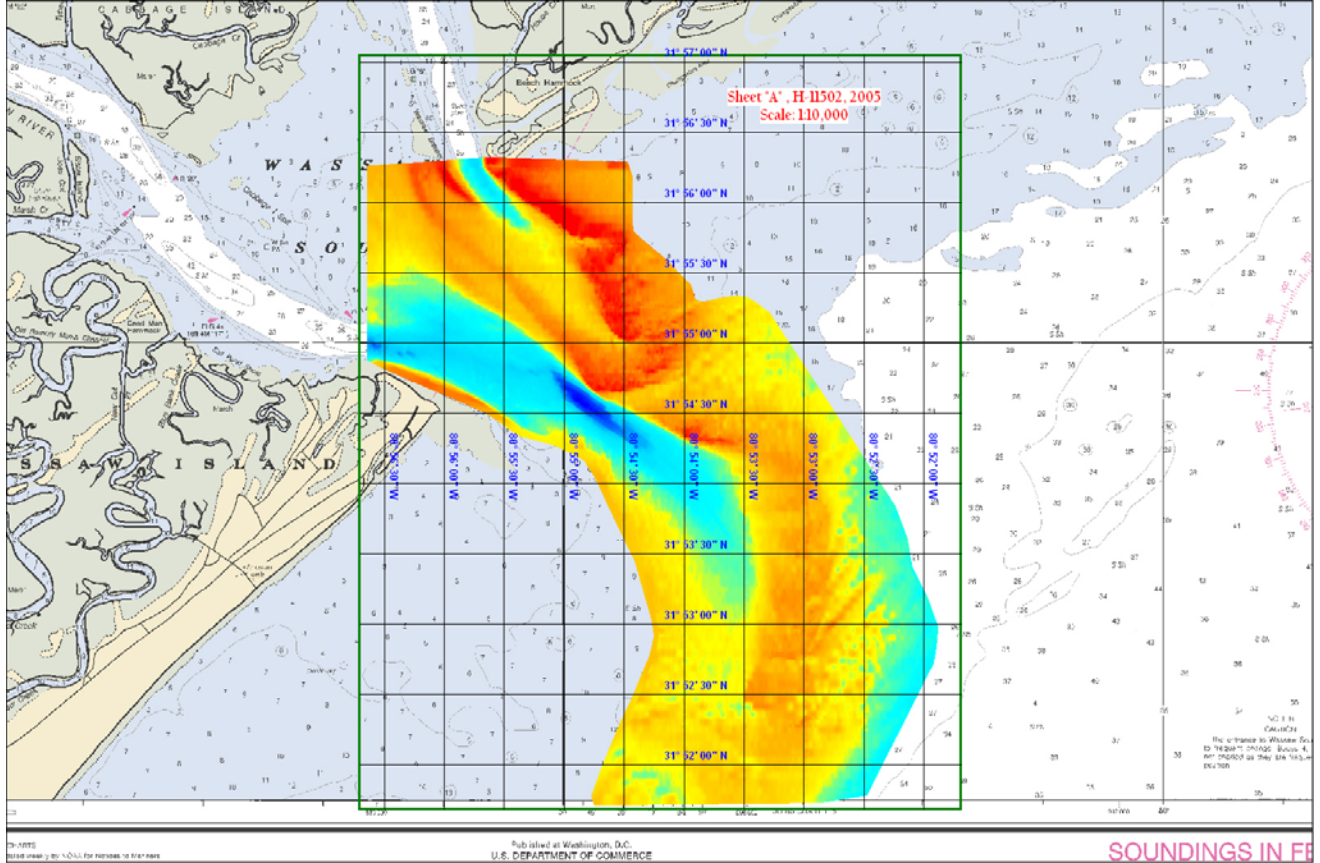
The purpose of this survey was to provide The Port Of Savannah, GA contemporary chart updates and validate the Electronic Nautical Chart (ENC). The USCG Group on Tybee Island made this request for contemporary soundings for their Search and Rescue (SAR) Operations. In addition, Office of Coast Survey's National Survey Plan has identified the Approaches to the Port of Savannah, GA as a critical survey area.

Survey Limits for Sheet "A": H11502 are as follows:

31° 51' 40" N
080° 56' 42" W
31° 57' 02" N
080° 51' 41" W

Survey Dates: July 19, 2005 (DN 200) – Oct.18, 2005 (DN291)

Survey limits are displayed graphically in the chartlet on the following page.



B. DATA ACQUISITION AND PROCESSING

B.1. EQUIPMENT

Navigation Response Team 2 and survey Launch 1210 acquired data. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR) * for this project. Major data acquisition systems are summarized below.

An Innerspace model 455 depth sounder, S/Ns 205 was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

A Klein 3110 side scan sonar TPU (S/N 315) with a model 3210 towfish (S/N 414), was used throughout this survey. The side scan sonar equipment was used for 200% coverage of charted white water.

**** Data filed at the Atlantic Hydrographic Branch.***

A Trimble DGPS Beacon Receiver (S/N 0220261525) was used as the primary navigation station on launch 1210.

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 198671-1477.

NOAA launch 1210, a 30-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

B.2. QUALITY CONTROL *See also the Evaluation Report*

Following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2003 has insured the integrity of the survey data for H11502

The lead line for launch 1210 was calibrated using a steel tape on March 02, 2005 (DN:061). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the Caris program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on March 02, 2005 (DN:061). These measurements were conducted in Tybee Island on the Savannah River using the level method. Settlement and squat correctors were applied to the sounding plots using the Caris program.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a high accuracy (1st order) calibration point.

Side Scan Sonar Quality Control

Daily confidence checks were conducted by observing side scan imagery in the vicinity of known contacts, such as buoys or sand waves. Side scan data were considered satisfactory if these contacts could be distinguished throughout the entire range of the side scan trace. The confidence checks were performed daily at 100/500kHz. *Do not concur. (Side scan trace was not of good quality. One channel was washed out for 95% of the data collected.)*

Coverage of 200% was obtained wherever possible in the required survey areas and where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents, biological noise, or sea state, were seen periodically. Significant contacts and shadows were processed with Caris HIPS/SIPS to determine the height off the bottom. The significant contacts were then compared by position, as

well as common depth and relationship to channels to determine if further investigations were needed. All areas surveyed were track line/swath line plotted to insure complete coverage. ***Do not concur. (Side scan sonar coverage was to the charted 18-foot depth curve only.)***

The system simultaneously logs data in both frequency of 100kHz and 500kHz. The recorder was set on one of either 50/75/100-meter range scales. There were no water depths greater than 16 meters.

Junctions

H11502 Junctions with the following surveys: H-10581 (***1994***) to the West, H-10582 (***1995***) to the Northeast, H-10576 (***1994***) to the East, and H-11145 (***2002***) to the South. Soundings were found to be in general agreement with exceptions at specific points that will be addressed in the chart comparison section of this report. ***(Do not concur. According to Project instructions these are considered Prior surveys rather than Junctional surveys. There were no surveys junctioning with the present survey.)***

B.3. CORRECTIONS TO ECHO SOUNDING

A table detailing all sound velocity casts is contained in Project Reports DAPR II*. Sound velocity data has been submitted with the digital data package. Cast data is organized on the digital media as follows: vessel / day of cast / cast data. * ***Data filed at the Atlantic Hydrographic Branch.***

There are no deviations to be discussed in this section.

C. VERTICAL AND HORIZONTAL CONTROL *See also the Evaluation Report*

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. The manufacturer calibrated this unit on January 4, 2005. Data quality assurance tests were performed after each cast. Program VELOCWIN was used for computing the correctors. Corrections were applied to the sounding plot using the Caris HIPS.

Field soundings are corrected by unverified actual heights from NOAA/CO-OPS. The Real Time Actual 6 min Tides are downloaded from: "http://co-ops.nos.noaa.gov/data_res.html", for all gauges required in the given projects defined by the ZDF file provided in the project letter, and instruction. Tide values are downloaded in blocks of data that covers the Times of Hydrography, and saved in a text file format. The MapInfo program is then used with the "HYDRO_MI" pre-Survey function, of "Create Cowlis", this function converts the text file into a Caris tide file (.tid).

All elevations and soundings on survey H11502 are based on MLLW unless otherwise specified. ***Concur.***

A Request for Approved Tides letter was sent to N/OPS1 on November 1, 2005 (Appendix IV).

Horizontal Control

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17N. The control reference station used for this survey was the USCG DGPS Beacon, auto – power selectable (strongest station signal).

Horizontal dilution of precision (HDOP) was monitored on Hypack daily on all survey platforms. No value exceeding 2.50, were used in positioning, adequate satellite coverage was maintained throughout the survey period. All positioning equipment was operated in a manner consistent with the manufacturer's requirements and as described in the DAPR*. There were no equipment malfunctions which affected the positional quality of the data.

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report*

There are three charts affected by this survey:

11505, 3 rd edition, Aug.01, 2006	1:40,000
11509, 30 th edition, Dec.01, 2006	1:80,000
11512, 61 st edition, Oct. 01, 2006	1:40,000

General Agreement with Charted soundings

Survey soundings acquired; show notable variances from those currently charted, in the range from three to ten feet. The surveyed area was an offshore entrance with numerous shoals, sandbars and breaking surf zones. Data was collected during varying sea and swell states ranging one to three feet. All charted soundings should be superseded by this survey. ***Concur with conditions. See also recommendations in AWOIS Item Investigations section of this report and the PYDRO Report.***

The following is a list of notable sounding discrepancies on the chart:

1. The currently charted bearing shoal at 31° 56' 21" N by 080° 56' 06" W has extended to the southeast 480 M. ***Concur with conditions. The shoal has changed directions and no longer extends toward the SE. It now extends in a more southerly direction. Delete the charted shoal and update the chart according to the present survey data.***
2. The offshore bar area located from 31° 54' 52" N by 080° 54' 56" W to 31° 54' 38" N by 080° 54' 36" W has encroached to the southwest approximately 150 M. Depths currently charted at 28' in this area now range between 0 to 4 feet. ***Concur. Update the chart according to the present survey data.***

**** Data filed at the Atlantic Hydrographic Branch.***

3. The 6-foot shoal area associated with charted “breakers” at 31° 54’ 15” N by 080° 52’ 53’ 34” W has migrated to the northwest, approximately 700 M. Currently charted depths of 15 feet at the northwest are now 1 to 3 feet. The entire 18-foot contour in this vicinity has encroached into the channel 120 M. *Concur. Update the chart with present survey data.*
4. The currently charted 6-foot shoals in the vicinity of 31° 52’ 32” N by 080° 53’ 22” W, with depths of 2 to 4 feet, are now 7 to 8 feet deep. *Do not concur. This area was updated based on Prior survey F00501, 2005 investigation of AWOIS 11993. Retain the area as charted.*

There were no items that warranted investigation, by 200% Side Scan Sonar: *Concur.*

There were no charted sounding notations within the survey limits. *Concur.*
All charted items within the survey limits were addressed during CEF and AWOIS investigations on survey F-00501, 2005.

AWOIS Item Investigations

There were two items within the survey limits; these were addressed in survey F-00501, 2005.

AWOIS 11993 charted obstruction, is now a six-foot shoal determined by a ten meter line spacing development *in the vicinity of Latitude 31° 52' 28.130"N, Longitude 080° 53' 26.660"W. NOS chart 11512 has been updated with survey F00501 data and the area should remain as charted.*

AWOIS 11474 charted wreck *in the vicinity of Latitude 31° 53' 00.500"N, Longitude 080° 52' 57.360"W* exists as charted with a least depth of four feet. *NOS chart 11512 has been updated with survey F00501 data and the area should remain as charted.*

Dangers to Navigation

There were no DTONS within the confines of H11502. *Do not concur. See the Evaluation Report and PYDRO generated report.*

D. 2. ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions *See Also Evaluation Report*

All Navigation Aids serve their intended purpose. Charted positions should be superseded by new survey positions. A recommendation was made to the USCG, Aids to Navigation Team at Tybee Island, GA to establish one aid at 031° 54’ 40” N by 080° 54’ 48” W to mark the new bearing shoal at this location. *Concur with conditions. The shoal bears in Latitude 31° 54' 40.307"N, Longitude 080° 54' 42.074"W.*

Ferry Routes

There are no Ferry routes within the confines of H11502. *Concur.*

Submarine Cables and Pipelines

There are no cables or pipelines. *Concur*

Bridges

There are no Bridges within the confines of the survey area. *Concur*

E. APPROVAL SHEET

OPR-G381

Hydrographic Survey
Wassaw Sound, GA
Survey Registry No. H11502

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Submitted:



**David B. Elliott - Team Leader
Navigation Response Team 2**

APPENDIX I

DANGERS TO NAVIGATION REPORT

H11502_DTONS

Registry Number: H-11502
State: Georgia
Locality: Wassaw Sound
Sub-locality: Entrance to Wassaw Sound to 4.5NM East of Wassaw Island
Project Number: OPR-G381-NRT2-04
Survey Dates: 09/27/2005 - 10/18/2005

DTONS DETERMINED DURING OFFICE PROCESSING OF SURVEY H11502

Charts Affected

Number	Version	Date	Scale
11505	3rd Ed.	08/01/2006	1:40000
11512	61st Ed.	10/01/2006	1:40000
11509	29th Ed.	08/01/2005	1:80000
11480	39th Ed.	09/01/2005	1:449659
11009	37th Ed.	07/01/2004	1:1200000
411	51st Ed.	12/01/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	DTON 1 (1 FT SHOAL DEPTH)	Shoal	0.26 m	31° 54' 20.307" N	080° 53' 59.331" W	---
1.2	DTON 2 (7 FOOT SHOAL DEPTH)	Shoal	2.14 m	31° 54' 08.811" N	080° 53' 02.368" W	---
1.3	DTON 3 (2 FOOT SHOAL DEPTH)	Shoal	0.66 m	31° 54' 18.563" N	080° 53' 47.644" W	---
1.4	DTON 4 (0 FT SHOAL DEPTH)	Shoal	0.19 m	31° 54' 40.307" N	080° 54' 42.074" W	---
1.5	DTON 5 (6 FT SHOAL DEPTH)	Shoal	1.80 m	31° 55' 07.090" N	080° 55' 09.857" W	---
1.6	DTON 6 (0 FT SHOAL DEPTH)	Shoal	0.06 m	31° 55' 05.718" N	080° 54' 31.397" W	---
1.7	DTON 7 (6 FT SHOAL DEPTH)	Shoal	2.03 m	31° 55' 20.218" N	080° 55' 22.345" W	---
1.8	DTON 8 (6 FOOT SHOAL DEPTH)	Shoal	1.99 m	31° 53' 56.365" N	080° 52' 58.947" W	---

1 - Danger To Navigation

1.1) DTON 1 (1 FT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 54' 20.307" N, 080° 53' 59.331" W
Least Depth: 0.26 m
Timestamp: 2005-290.14:57:45.090 (10/17/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-290 / 006_1439
Profile/Beam: 20648/1
Charts Affected: 11505_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

one foot depth found in area with charted depth of 15 feet.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-290/006_1439	20648/1	0.00	000.0	Primary

Hydrographer Recommendations

delete the 15 foot depth and chart the 1 foot depth and update contours to reflect shoal.

Cartographically-Rounded Depth (Affected Charts):

1ft (11505_1, 11512_1, 11509_1)

0fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 1 FT SHOAL SOUNDING
 OBJNAM - DTON 1
 QUASOU - 6:least depth known
 RECDAT - 20080109
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR, UPDATE THE DEPTH AND CONTOUR.

1.2) DTON 2 (7 FOOT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 54' 08.811" N, 080° 53' 02.368" W
Least Depth: 2.14 m
Timestamp: 2005-270.14:38:22.866 (09/27/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-270 / 078_1435
Profile/Beam: 3414/1
Charts Affected: 11505_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

7 FOOT DEPTH IN AREA CHARTED 12 FEET.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-270/078_1435	3414/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE CHARTED 12 FOOT DEPTH AND CHART 7 FOOT DEPTH.

Cartographically-Rounded Depth (Affected Charts):

7ft (11505_1, 11512_1, 11509_1)

1fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 7 FOOT SHOAL DEPTH
 OBJNAM - DTON 2
 QUASOU - 6:least depth known
 RECDAT - 20080109
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR, UPDATE THE DEPTH AND CONTOUR.

1.3) DTON 3 (2 FOOT SHOAL DEPTH)

DANGER TO NAVIGATION

Survey Summary

Survey Position: 31° 54' 18.563" N, 080° 53' 47.644" W
Least Depth: 0.66 m
Timestamp: 2005-291.14:54:26.412 (10/18/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-291 / 021_1453
Profile/Beam: 1557/1
Charts Affected: 11505_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

2 FOOT DEPTH IN AREA CHARTED 9 FEET.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-291/021_1453	1557/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE CHARTED 9 FOOT DEPTH AND CHART 2 FOOT DEPTH.

Cartographically-Rounded Depth (Affected Charts):

2ft (11505_1, 11512_1, 11509_1)

0 ¼fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 2 FT SHOAL SOUNDING
 OBJNAM - DTON 3
 QUASOU - 6:least depth known
 RECDAT - 20080110
 SORDAT - 20051008

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR, UPDATE THE DEPTH AND CONTOUR.

1.4) DTON 4 (0 FT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 54' 40.307" N, 080° 54' 42.074" W
Least Depth: 0.19 m
Timestamp: 2005-291.15:11:54.031 (10/18/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-291 / 028_1511
Profile/Beam: 44/1
Charts Affected: 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

0 FOOT DEPTH INSIDE CHARTED 30 FOOT CONTOUR IN VICINITY OF CHARTED 28 FOOT DEPTH.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-291/028_1511	44/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE CHARTED 28 FOOT DEPTH AND CHART 0 FOOT DEPTH AND THOROUGHLY UPDATE CONTOURS IN THIS AREA.

Cartographically-Rounded Depth (Affected Charts):

0ft (11512_1, 11509_1)

0fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 0 FOOT SHOAL AREA
 OBJNAM - DTON 4
 QUASOU - 6:least depth known
 RECDAT - 20080110

SORDAT - 20051018
SORIND - US,US.nsurf,h11502
STATUS - 1:permanent
TECSOU - 1:found by echo-sounder
VERDAT - 12:Mean lower low water

Office Notes

CONCUR, UPDATE THE DEPTH AND CONTOUR.

1.5) DTON 5 (6 FT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 55' 07.090" N, 080° 55' 09.857" W
Least Depth: 1.80 m
Timestamp: 2005-271.15:05:55.006 (09/28/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-271 / 042_1453
Profile/Beam: 13523/1
Charts Affected: 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

6 FOOT DEPTH IN AREA CHARTED 10 - 13 FEET.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-271/042_1453	13523/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE CHARTED 10 AND 13 FOOT DEPTHS AND CHART 6 FOOT DEPTH.

Cartographically-Rounded Depth (Affected Charts):

6ft (11512_1, 11509_1)

1fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 6 FOOT SHOAL DEPTH
 OBJNAM - DTON 5
 QUASOU - 6:least depth known
 RECDAT - 20080111
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR. UPDATE THE DEPTHS AND THE CONTOURS

1.6) DTON 6 (0 FT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 55' 05.718" N, 080° 54' 31.397" W
Least Depth: 0.06 m
Timestamp: 2005-291.15:45:32.671 (10/18/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-291 / 036_1544
Profile/Beam: 892/1
Charts Affected: 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

0 FOOT DEPTH IN AREA CHARTED 3- 6 FEET.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-291/036_1544	892/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE CHARTED DEPTHS AND CHART 0 FOOT DEPTH

Cartographically-Rounded Depth (Affected Charts):

0ft (11512_1, 11509_1)

0fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 0 FOOT SHOAL DEPTH
 OBJNAM - DTON 6
 QUASOU - 6:least depth known
 RECDAT - 20080111
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR. UPDATE THE DEPTHS AND THE CONTOURS

1.7) DTON 7 (6 FT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 55' 20.218" N, 080° 55' 22.345" W
Least Depth: 2.03 m
Timestamp: 2005-271.16:12:49.820 (09/28/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-271 / 034_1609
Profile/Beam: 3594/1
Charts Affected: 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

6 FOOT DEPTH INSIDE THE 12 FT CONTOUR.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-271/034_1609	3594/1	0.00	000.0	Primary

Hydrographer Recommendations

ADD 6 FOOT DEPTH AND ADJUST 12 FOOT CURVE.

Cartographically-Rounded Depth (Affected Charts):

6ft (11512_1, 11509_1)

1fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 6 FT SHOAL DEPTH INSIDE 12 FT CURVE
 OBJNAM - DTON 7
 QUASOU - 6:least depth known
 RECDAT - 20050116
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

CONCUR. UPDATE THE DEPTHS AND THE CONTOURS

1.8) DTON 8 (6 FOOT SHOAL DEPTH)**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 53' 56.365" N, 080° 52' 58.947" W
Least Depth: 1.99 m
Timestamp: 2005-290.15:50:23.281 (10/17/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-290 / 008_1533
Profile/Beam: 17827/1
Charts Affected: 11505_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

6 FOOT DEPTH INSIDE THE 12 FT CONTOUR.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-290/008_1533	17827/1	0.00	000.0	Primary

Hydrographer Recommendations

ADD 6 FOOT DEPTH AND ADJUST 12 FOOT CURVE.

Cartographically-Rounded Depth (Affected Charts):

6ft (11505_1, 11512_1, 11509_1)

1fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 INFORM - 6 FOOT SHOAL DEPTH
 OBJNAM - DTON 8
 QUASOU - 6:least depth known
 RECDAT - 20080117
 SORDAT - 20051018

SORIND - US,US,nsurf,H11502

STATUS - 1:permanent

TECSOU - 6:swept by wire-drag

VERDAT - 12:Mean lower low water

Office Notes

CONCUR. UPDATE THE DEPTHS AND THE CONTOURS

APPENDIX II
SURVEY FEATURES REPORT

PYDRO BATHY FEATURES REPORT

Registry Number: H-11502
State: Georgia
Locality: Wassaw Sound
Sub-locality: Entrance to Wassaw Sound to 4.5NM East of Wassaw Island
Project Number: OPR-G381-NRT2-04
Survey Date: 10/18/2005

Charts Affected

Number	Version	Date	Scale
11505	3rd Ed.	08/01/2006	1:40000
11511	17th Ed.	06/01/2004	1:40000
11512	61st Ed.	10/01/2006	1:40000
11509	29th Ed.	08/01/2005	1:80000
11480	39th Ed.	09/01/2005	1:449659
11009	37th Ed.	07/01/2004	1:1200000
411	51st Ed.	12/01/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	327/1 Wrk Awash LD= -0.09 ft	Sounding	-0.03 m	31° 55' 37.781" N	080° 54' 33.366" W	---
2.1	ESPECO	AWOIS	[no data]	[no data]	[no data]	---
2.2	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---

1 - Features from Bathymetry

1.1) Profile/Beam - 327/1 from h11502 / nrt2_1210_sb / 2005-291 / 058_1423

Survey Summary

Survey Position: 31° 55' 37.781" N, 080° 54' 33.366" W
Least Depth: -0.03 m
Timestamp: 2005-291.14:23:38.416 (10/18/2005)
Survey Line: h11502 / nrt2_1210_sb / 2005-291 / 058_1423
Profile/Beam: 327/1
Charts Affected: 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

Soundings over charted subm wrk, verified existance of feature. 2 small 6" diameter crab bouy are tied off on wreck.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11502/nrt2_1210_sb/2005-291/058_1423	327/1	0.00	000.0	Primary

Hydrographer Recommendations

Remove PA.

Cartographically-Rounded Depth (Affected Charts):

0ft (11512_1, 11509_1)

0fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
 CONVIS - 2:not visual conspicuous
 INFORM - Remove PA, (Awois ??????)
 OBJNAM - Dangerous Wrk Awash
 STATUS - 1:permanent
 TECSOU - 1:found by echo-sounder
 VALSOU - -0.028 m

VERDAT - 12:Mean lower low water

WATLEV - 5:awash

Office Notes

Concur with clarification. Shown on Chart 11512: 61st Edition, Date, as a visible wreck. Retain as charted.

2 - AWOIS Database Items

2.1) AWOIS #11474 - ESPECO

No Primary Survey Feature for this AWOIS Item

Search Position: 31° 53' 00.500" N, 080° 52' 57.360" W
Historical Depth: [None]
Search Radius: 70
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 11505_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

Too shallow to investigate with SSS. However, have a single beam ping on a 7ft sounding that could be this wreck. Not enough soundings to disprove the existance of the 4 ft dangerous submerge wreck. Leave as charted. Update awois database.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 11474	0.00	000.0	Primary

Hydrographer Recommendations

Investigation not sufficient to verify nor disprove this item. It is recommended that the 4' dangerous sunken wreck be retained as charted.

S-57 Data

[None]

Office Notes

Concur

2.2) AWOIS #11993 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 31° 52' 28.130" N, 080° 53' 26.660" W
Historical Depth: [None]
Search Radius: 100
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 11505_1, 11511_1, 11512_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

No SSS coverage, too shoal for this type of operation. However, it is bounded by shoal 6 ft. Update awois database.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 11993	0.00	000.0	Primary

Hydrographer Recommendations

Retain area as charted.

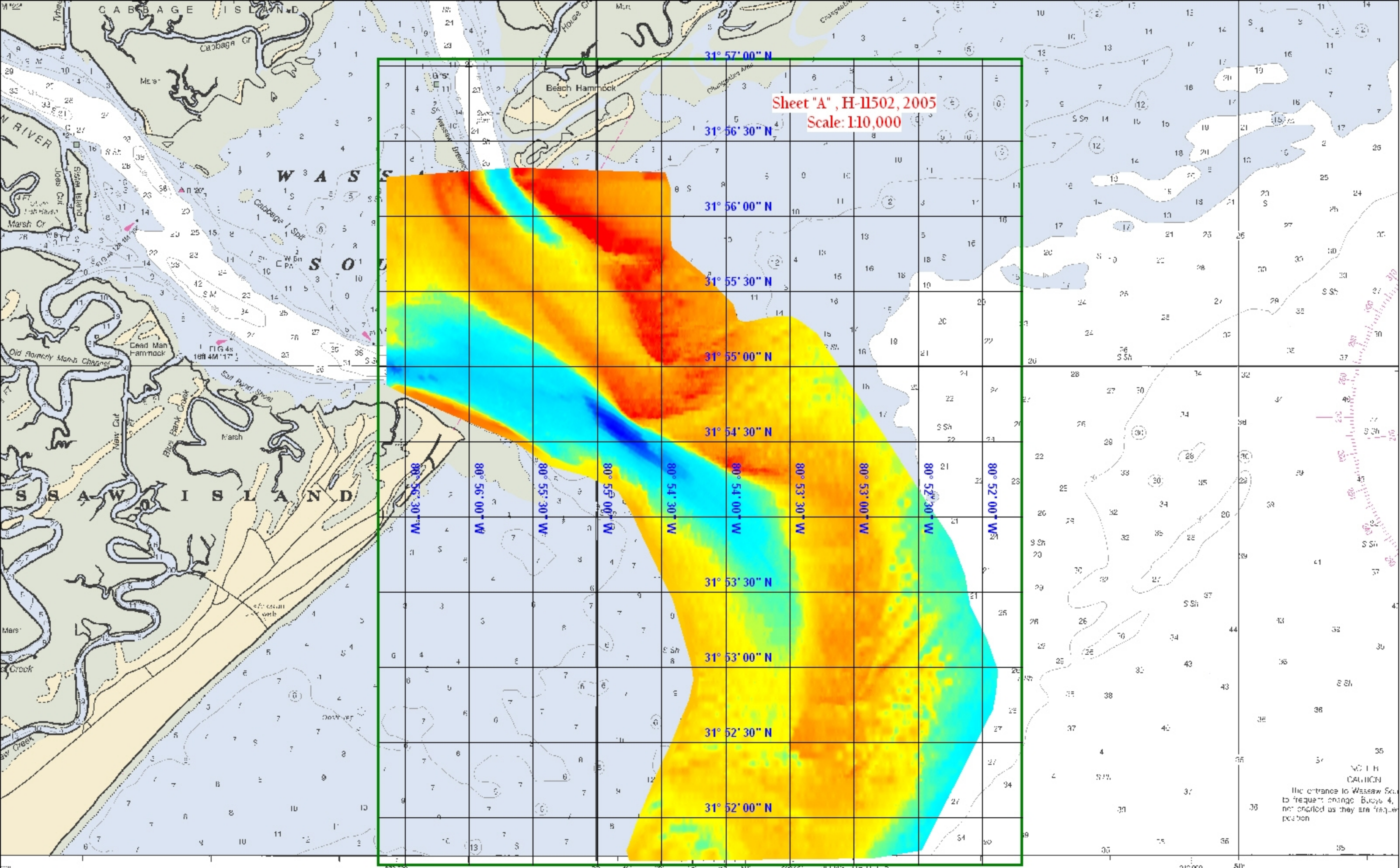
S-57 Data

[None]

Office Notes

Concur.

APPENDIX III
FINAL PROGRESS SKETCH AND SURVEY



Sheet "A", H-11502, 2005
Scale: 1:10,000

NOT IN
CAUTION
The entrance to Wassaw Sound to frequent change. Buoys 4, not included as they are frequent position.

APPENDIX IV
TIDES AND WATER LEVELS

APPENDIX V
SUPPLEMENTAL SURVEY AND
CORRESPONDENCE



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : January 5, 2006

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-G381-NRT2-2004

HYDROGRAPHIC SHEET: H11502

LOCALITY: Entrance to Wassaw Sound to 4.5NM East of Wassaw
Island, GA

TIME PERIOD: July 19 - October 18, 2005

TIDE STATION USED: 867-0870 Fort Pulaski, GA

Lat. 32 02.2'N Long. 080 54.1' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.173 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SA173, SA174, & GA33

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).

Fa [Signature]

CHIEF, PRODUCTS AND SERVICES DIVISION



ATLANTIC HYDROGRAPHIC BRANCH EVALUATION REPORT FOR H11502 (2005)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

HSTP PYDRO version 7.3 r2239
CARIS HIPS/SIPS version 6.1 SP1 HF 1-6
CARIS Bathy Manager version 2.1 HF 1-3
DKART INSPECTOR, version 5.0 Build 732

B.2 QUALITY CONTROL

B.2.1 H-CELL

The AHB source depth grid for the survey's nautical chart update product entailed using a 2m shoal finalized resolution grid model. All soundings were extracted from a 5m resolution product surface model generated at a scale of 1:40,000, generalization radius of 400m, 100m cell resolution, and defocused (11421_40k_400mrad_100mres_DF.hns). The chart scale soundings were selected from the survey scale selections. Office personnel used the surface model as reference when selecting the chart scale soundings, ensuring that the selected soundings portray the bathymetry within the common area.

Grid product surface depth curves were created but they were too erratic for use in the final H-cell. The curves were utilized during sounding selection and quality assurances during processing efforts at AHB. The depth curves on the final product are hand-drawn and are for the zero depth areas only.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CU.000) with all values measured in feet following NOAA sounding rounding rules.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The H11502 CARIS H-Cell final deliverables include the following Base Cell products:

H11502_CU.000	1:378,838 Scale	H11502 H-Cell with Chart Scale Selected Soundings
H11502_SS.000	1:40,000 Scale	H11502 Survey Scale Soundings
H11502_BlueNtoes.000	1:40,000 Scale	H11502 Cartographic Notes
H11502_Contours.000	1:40,000 Scale	Hand Digitized 0 foot Depth Curve

B.2.2. Junctions

No contemporary surveys exist for junctioning..

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional correction required by Atlantic Hydrographic Branch. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for H11502. Vertical datum for all soundings is reference to Mean Lower Low Water (MLLW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 17. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements. The horizontal geodetic datum was translated to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) during CARIS HOM processing. The S-57 H-CELL format serves as the exchange file format submitted to Marine Chart Division.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

11512 (61st Edition, Oct./06)

Corrected through NM 10/07/2006

Corrected through LNM 10/03/2006

ENC Comparison

US5GA20M

Savannah River Approach

Edition 10

Application Date 2007-09-26

Issue Date 2008-02-04

Chart 11505

US5GA21M

Savannah River and Wassaw Sound

Edition 14

Application Date 2008-01-29

Issue Date 2008-01-29

Chart 11512

US5GA24M

Savannah River and Wassaw Sound

Edition 14

Application Date 2008-01-14

Issue Date 2008-01-14

Chart 11512

D.1.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report. The following are noted:

a. The field unit was not directed to obtain bottom samples in the Letter Instructions, therefore all charted sea bed characteristic (SBDARE) objects were retained as charted. The spatial and feature attributes of the SBDARE point features were carried forward from the ENC's (US5GA20M, US5GA21M, US5GA24M).

b. The *visible wreck* charted in Latitude 31° 55' 37.781" N, Longitude 080° 54' 3.366"W on NOS Chart 11512, 61st edition was previously charted as a *submerged wreck PA*. The present survey proved the existence of the wreck with a least depth of -0.1 feet at MLLW. This item is correctly shown on the latest edition of the chart. No changes to charting are recommended.

c. Hand drawn contours detailing the new zero foot contour in the present survey area are shown on the H11502_CU layer. The charted obstructions detailing the zero foot contour centered in Latitude 31° 55' 52.69" N, Longitude 080° 54' 55.39"W should be deleted from the chart and the areas updated with present survey data. These shoal areas have shifted.

D.2. ADDITIONAL RESULTS

D.2.1. Aids to Navigation

The field positioned seven navigational aids during the present survey. A complete listing can be found in the PYDRO generated ATON Report appended to the Descriptive Report. Six of these aids are charted on the current edition of NOS chart 11512 and ENC's US5GA20M, US5GA21M, and US5GA24M within the limits of the present survey. These appear to be marking the safe route for passage through Wassaw Sound into the Wilmington River. The seventh aid located in Latitude 31° 52' 42.62" N, Longitude 080° 53' 30.69" W was not charted. AHB recommends deferring the charting disposition of these navigational aids to Marine Chart Division, Nautical Data Branch.

COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not done during office processing in accordance with section 4 of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following NOS charts were used for compilation of the present survey:

11512 (61st Edition, Oct/ 2007) 1:40,000 Scale

Corrected through NM 08/11/2007

Corrected through LNM 07/31/2007

US5GA20M

Savannah River Approach

Edition 10

Application Date 2007-09-26

Issue Date 2008-02-04

Chart 11505

US5GA21M

Savannah River and Wassaw Sound

Edition 14

Application Date 2008-01-29

Issue Date 2008-01-29

Chart 11512

US5GA24M

Savannah River and Wassaw Sound

Edition 14

Application Date 2008-01-14

Issue Date 2008-01-14

Chart 11512

D.3 ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

AHB PRE-COMPILATION PROCESS

REGISTRY No.	H11502
PROJECT No.	OPR-G381-NR2-04
FIELD UNIT	NOAA LAUNCH 1210
PRE-COMPILER	DEBORAH BLAND
LARGEST SCALE CHART	#11512, edition #61, 20061007
CHART SCALE	1: 40,000
SURVEY SCALE	1: 10,000
DATE OF SURVEY	July 19, 2005 to October 18, 2005
CONTENT REVIEW DATE	20080220

Components	File Names
<i>Product Surface Creation</i>	PS_H11502_10K_2M_SHOAL.hns
<i>Shifted Surface</i>	PS_H11502_10K_2M_SHOAL_Shifted.hns
<i>Contour Layer</i>	H11502_Hand_Digitized_Contours.hob
<i>Survey Scale Soundings</i>	H11502_SS_Soundings.hob
<i>Chart Scale Soundings</i>	H11502_CU_Soundings.hob
<i>Feature Layer</i>	H11502_Features.hob
<i>Meta-Objects Layer</i>	H11502_Meta.hob
<i>Blue Notes</i>	H11502_BlueNotes.hob

SPECIFICATIONS:

- I. ~~COMBINED SURFACE~~:
 - a. File name: **H11502_AHB_2m_SHOAL_Final.hns**
 - b. Resolution: **2m**
 - c. Fieldsheet Location:
- II. ~~PRODUCT SURFACE (SOUNDINGS)~~:
 - a. Scale: **1: 10,000**
 - b. Radius: **100m**
 - c. Resolution: **5m**
 - d. Depth
 - i. Minimum: **-1.0m**
 - ii. Maximum: **18.0m**
- PRODUCT SURFACE (CONTOURS): **NONE**
 - a. Scale: 1: _____
 - b. Radius: _____ m
 - c. Resolution: _____ m
- III. ~~SHIFTED SURFACE~~:
 - a. Single Shift Value: **-0.229m (feet)**
- IV. ~~CONTOUR LAYER~~:
 - a. Use a Depth List: **Hand Drawn zero depth curve only**
 - b. Output Options:
 - i. Create contour lines:
 1. Line Object: DEPCNT
 2. Value Attribute: VALDCO

- V. SOUNDING SELECTION:
 - a. Selection Criteria:
 - i. Radius
 - ii. Shoal biased
 - iii. Use Single-Defined Radius: **50** distance on ground (m)
 - iv. Filter: Generalized !=1

- VI. FEATURES:
 - a. Brought in from Survey
 - Total No. **3**
 - b. Brought in from ENC
 - ENC: #US5GA20M), US5GA24M, US5GA21M
 - Total No. **15**

- VII. META-OBJECTS:
 - a. M_COVR attributes

Acronym	Value
INFORM	N/A
CATCOV	1
SORDAT	20051018
SORIND	US,US,survey,H11502

- b. M_QUAL attributes

Acronym	Value
CATZOC	B
INFORM	H11502, OPR-G381-NRT2-04, NOAA Survey Launch 1210
POSACC	10
SORIND	US,US,survey,H11502
SORDAT	20051018
SUREND	20051018
SURSTA	20050719

- VIII. NOTES:

APPROVAL SHEET
H11502

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive review As per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Deborah A. Bland
Cartographer
Atlantic Hydrographic Branch

I have reviewed the Base Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____
Shepherd Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch