

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

HYDROGRAPHIC TITLE SHEET

REGISTRY NUMBER:

H11214

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: **Florida**

General Locality: **St. Johns River**

Sub-Locality: **Jacksonville to Ortega**

Scale: **1:10,000** Date of Survey: 28May.2003-July 29. 2003

Instructions Dated: **05 May 2003** Project Number: **OPR-G443-NRB**T2****

Vessel: **NOAA Launch 1210**

Chief of Party: **David B. Elliott - Team Leader**

Surveyed by: **David Elliott, Robert Ramsey & Laurie Brennan (NRT2)**

Soundings by: **Innerspace 448**

Graphic record scaled by: **DE, RR, LB**

Graphic record checked by: **DE, RR, LB**

Hewlett Packard Design Jet 2500CP (office)

Protracted by: **N/A** Automated Plot: **HP-750C (Field)**

Verification by: **Atlantic Hydrographic Branch *Personnel***

Soundings in: **Meters *Feet* at MLLW**

Remarks: ***Bold, Red, Italic notes in Descriptive Report were made during office processing.***

1) All Times are UTC.

2) This is a basic Hydrographic Survey under the Navigable Area Concept.

3) Projection is UTM Zone 17.

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DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H-11214

Scale of Survey: 1:10,000

Year of Survey: 2003

Navigation Response Team 2 - Launch 1210

David B. Elliott- Team Leader

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Port Letter Instructions for project OPR-G443-NR**T2**, Brunswick Georgia to Jacksonville, Florida. The instructions are dated May 5, 2003.

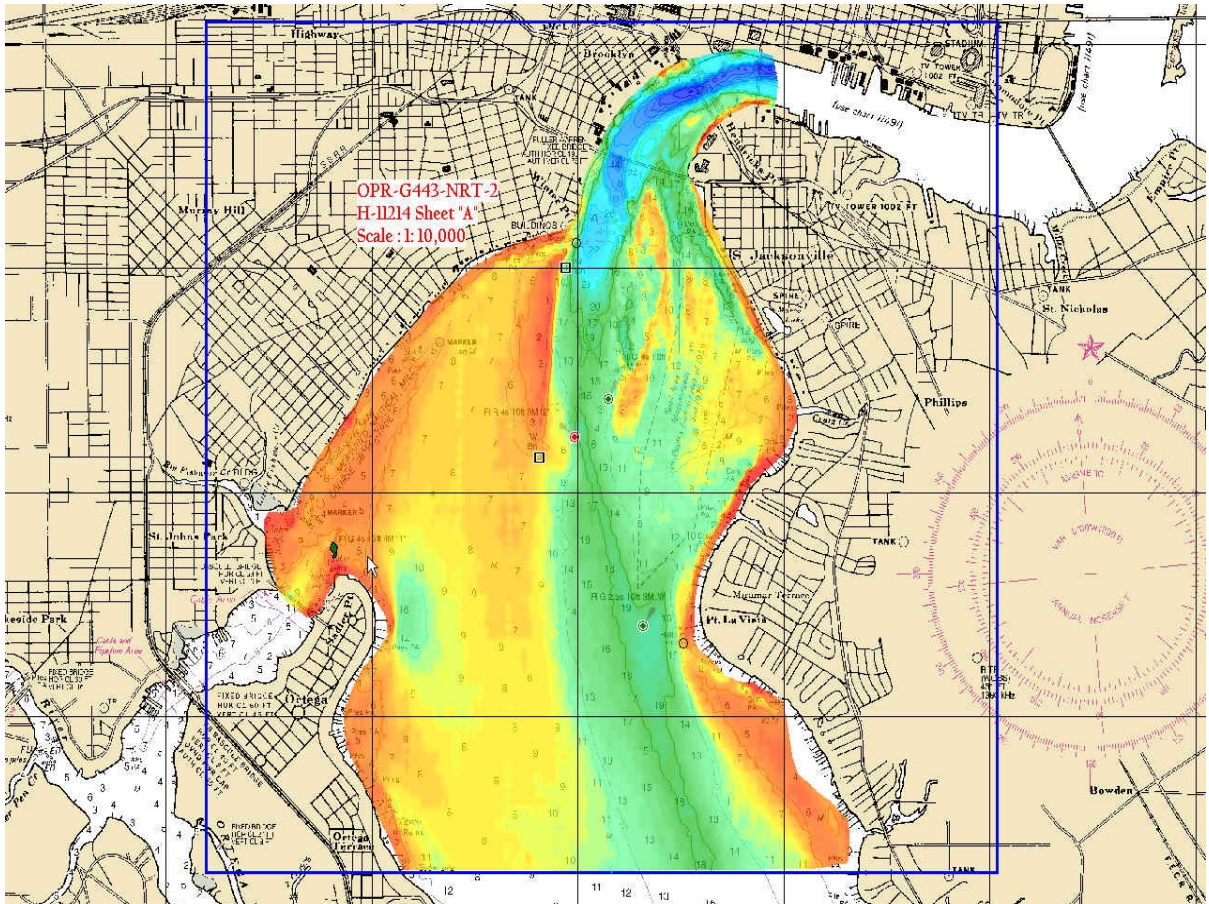
The purpose of this project is to collect new hydrography in support of the NOAA led Coastal Storms Initiative and to update National Ocean Service (NOS) charts on the St. Johns River in the vicinity of Jacksonville, FL. Results from the investigations will also serve as a chart evaluation for NOS Electronic Nautical Charts (ENC). The hydrographic data from this project will help ensure navigational safety through updated critical nautical charts and provide new information for emergency response organizations to use in the event of a marine casualty or coastal storm.

Survey Limits for Sheet "A" H-11214 are as follows:

~~30° 24' 39" N~~ **30° 19' 36" N**
~~081° 22' 15" W~~ **081° 38' 18" W**
~~30° 20' 33" N~~ **30° 15' 29" N**
~~081° 30' 57" W~~ **081° 42' 40" W**

Survey Dates: May 28, 2003 (DN: 148) to July 29, 2003 (DN: 210)

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



B. DATA ACQUISITION AND PROCESSING *SEE ALSO THE EVALUATION REPORT.*

B.1. EQUIPMENT

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

An Innerspace model 448 depth sounder, S/Ns 188 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 recorder (S/N 315) with a model 3210 towfish (S/N 414), was used throughout this survey. The side scan sonar equipment was used to investigate AWOIS items.

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

A Trimble Pathfinder ProXRS (S/N 0224010201) and antenna (S/N 0220170250) were used for all ENC high accuracy positioning and establishment of calibration points.

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 27-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

The integrity of the survey data for H-11214 has been insured by following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2003.

The lead line for launch 1210 was calibrated using a steel tape on March 25, 2003(DN:084). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the Carris 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 25, 2003(DN:084) These measurements were conducted in Jacksonville, FL on the St. Johns River using the level method. Settlement and squat correctors were applied to the sounding plots using the Carris 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 100kHz.

A coverage of 200% was obtained wherever possible in the required survey areas and AWOIS items 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 were seen periodically. All contacts and shadows were scaled and entered into Carris 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.

The system frequency used was 100kHz. The recorder was set on one of either 50/75/100-meter range scales. There were no water depths greater than 35 meters.

When operating in shoaler waters (e.g. less than 30 meters deep), a short tow was required for the Edgetech system. When cable-out was approximately 7 meters or less, minor degradation of the side scan imagery and Innerspace echosounder traces were noted due to cross-talk between the two systems.

Crossline and mainscheme sounding data were compared using MAPINFO 5.1, with no significant discrepancies observed.

Junctions *SEE ALSO THE EVALUATION REPORT.*

Sounding Junctions were compared to H-11089, 2002 east of H-11214. The soundings compared favorably within 1 to 2 feet.

B.3. CORRECTIONS TO ECHO SOUNDING

A table detailing all sound velocity casts is contained in Separates III - Sound Velocity Profile Data. 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.

There are no deviations to be discussed in this section.

C. VERTICAL AND HORIZONTAL CONTROL

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 December 5 **29**, 2001 **2**. 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 Carris HIPS.

Field tide reduction of soundings is based on predicted tides from the Internet NOAA Co-Ops site. The predictions are from Main Street Bridge station 872-0226 and are in six minute intervals. Values and correctors were applied at the perspective locations of Hydrography from the Zone files provided by CO-OPS/RDD.

All elevations and soundings on survey H-11214 are based on MLLW unless otherwise specified.

A Request for Approved Tides letter was sent to N/OPS1 on August 18, 2003 (Appendix IV). *Approved tides and zones were reapplied to survey in Caris during office processing.*

Horizontal Control

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17. The control reference station used for this survey was the USCG DGPS Station at Savannah, GA (Station ID #818), located at 32°08.3156' N, 081°41.7798' W.

Horizontal dilution of precision (HDOP) was monitored on Hypack daily on all survey platforms. Neither value exceeded 4.00, and 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.* *Data filed at the Atlantic Hydrographic Branch.*

D. RESULTS AND RECOMMENDATIONS

D.1. CHART COMPARISON

There are two charts affected by this survey:

11491, 33rd edition, Mar 24, 2001	1:20,000
11492, 19 th edition, Nov. 24, 2001	1:40,000

General Agreement with Charted soundings

In general survey soundings compared with the charted soundings within three to five feet. The smooth tides may resolve some of these soundings. Some regions of the chart had discrepancies of 10 feet or more. All charted soundings should be superseded by this survey. *Concur.*

The isolated charted offshore shoal regions in blue have changed substantially. All of these areas are defined by six foot contours. Most of these regions show signs of notable erosion. *Concur.*

The Winter Point shoal shows the eastern edge of the ~~six~~ *five* foot contour moving east approximately fifty meters. This shoal is defined by two Danger beacons located at the northern and southern extremes. *Concur.*

The charted Spoil Area Discontinued from 1959 was split at fifty meters and shows depths greater than six foot throughout the region. The isolated six foot shoal along the eastern section no longer exists. *Concur. See also the Evaluation Report. D.1.1.*

Note: Due to the nature of this survey for the Coastal Storms Initiative (CSI) and primary need for contemporary bathymetry, extensive shoreline investigations were not conducted. However visual identifications conducted by NRT2 found regions alongshore in the form of Dols, piles and piers to be adequately charted. Unless otherwise noted in the sections below all features along shore visible or submerged should remain as charted. *Concur.*

The following is a list of Charted items that were investigated or disproved by 200% side scan sonar:

- 1.) The charted wreck PA on Chart # 11491_3 at 30° 17' 40.96" N, and 081° 40' 27.21" W, does not exist and was disproved by side scan sonar. This feature is not charted on Chart # 11492_1. **Concur. Delete dangerous Wk, depth unknown, PA.**
- 2.) ~~Three~~ **Two** charted Dols PA at 30° 18' 36.82" N, and 081° 39' 51.58" W do not exist and were disproved by side scan sonar. **Concur. Delete charted Dols PA.**

The following is a list of Charted items that were visually investigated.

- 1.) The submerged wreck at 30° 16' ~~20.80~~ **21.89**" N, and 081° 39' 24.91 ~~40~~" W does not exist. The location of this wreck has been covered by a small boat pier. This wreck should be removed from the chart. The bottom in this region was too shallow for a detached position and the size of the pier did not justify positioning. **Concur. Delete charted dangerous Wk, depth unknown, PA.**
- 2.) The obstruction at 30° 15' 46.00" N, and 081° 41' 46.68" W exists as charted. **Concur. Retain as charted.**
- 3.) The ruins at 30° 15' 43.30" N, and 081° 41' 43.40" W exists as charted. **Concur. Retain as charted.**
- 4.) The (2) charted Measured Nautical Mile Markers at 30° 17' 18.49" N, 081° 42' 10.90" W and 30° 18' 05.22" N, 081° 41' 27.24" W, could not be located visually. The shallow water in this region prohibited a side scan sonar investigation. These markers should be removed from the chart and a single submerged pile should be charted at each position listed above. **Concur. Revise charted mile markers to subm piles.**
- 5.) There is a new Manatee sign at 30° 18' 33.53" N, and 081° 40' 37.72" W, this feature should be added to the chart. **Concur. Chart sign symbol with notation "sign".**
- 6.) There is a new Manatee sign at 30° ~~47~~**16**' 37.75" N, and 081° 39' 58.88" W, this feature should be added to the chart. **Concur. Chart sign symbol with notation "sign".**

AWOIS Item Investigations

There were no AWOIS items within the survey limits. **Concur.**

Dangers to Navigation

There were no Dangers to Navigation reported on H-11214. *Concur.*

D. 2. ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions

All Navigation Aids serve their intended purpose. *Concur.*

All floating aids were positioned by the survey vessel and are on station. *Concur.*

Note: The light charted as FL G “1” LL# 7690 was destroyed and is currently marked by a lighted WR “1”. The USCG has scheduled the replacement of this feature and therefore this light should remain as charted. *Concur. Defer to MCD Update Services Group for charting recommendations for aids to navigation.*

Ferry Routes

There are no Ferry routes within the confines of H-11214. *Concur.*

Submarine Cables and Pipelines

There are two submerged cable crossing areas on chart # 11492 . *Concur.*

There are three submerged cable crossings on chart # 11491. *Concur.*

There are no overhead cable crossings. *Concur.*

Bridges

There are four bridges within the confines of H-11214. The bridge clearances both vertical and horizontal were checked by NRT2 and are charted correctly. *Concur.*

The Fuller Warren Bridge (I-95) has been replaced by new construction. The old bridge has been partially removed and the new bridge has been completed and opened for traffic. Aerial photography or “As builds” should be obtained by MCD to accurately portray this bridge on future editions of charts for this region. *Concur. MCD action recommended.*

E. APPROVAL SHEET

OPR-G443-NRB
St. Johns River
Jacksonville, FL
Survey Registry No. H-11214

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

E. APPROVAL SHEET



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: May 18, 2004

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-G443-NRT2-2003

HYDROGRAPHIC SHEET: H11214

LOCALITY: Jacksonville to Ortega, St. John's River, FL

TIME PERIOD: May 28 - July 29, 2003

TIDE STATION USED: 872-0226 Main Street Bridge, FL
Lat. 30° 19.2'N Lon. 81° 39.5'W

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

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.577 meters

TIDE STATION USED: 872-0357 I-295 Bridge, FL
Lat. 30° 11.5'N Lon. 81° 41.5'W

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

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.309 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SJR29, SJR30, SJR31, SJR31A, SJR32 & SJR33.

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.

Fa 

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H11214 (2003)**

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

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

Hydrographic Processing System
MicroStation J, version 07.01.04.16
I/RAS B, version 07.01.000.18
MapInfo, version 6.5
CARIS HIPS/SIPS 5.3
PYDRO, version 4.5.2

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

JUNCTIONS

H11089 (2002) to the east
H11215 (2003) to the south

A standard junction was effected between H11089 (2002), H11215 (2003) and the present survey. There are no junctional surveys to the north or the west. Present survey depths are in harmony with the charted hydrography to the east and south.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON 11491 (33rd Edition, Mar 24/01)

Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section D. of the Descriptive Report. Attention is directed to the following:

1) The charted Spoil Area (discontinued) Depths from Surveys of 1959 and 1976, in the vicinity of Latitude 30°17'47.93"N, Longitude 81°39'58.79"W, was investigated by the hydrographer. It is recommended the charted feature be deleted from the chart, and the area be charted as shown on the present survey.

2) During office processing, three significant uncharted submerged piles were located with side scan sonar (SSS) in the vicinity of Latitude 30°17'05.81"N, Longitude 81°42'06.65"W. It is recommended that the Subm piles be charted as shown on the present survey .

<u>Contact</u>	<u>Latitude N</u>	<u>Longitude W</u>
subm pile	30°17'06.88"	81°42'06.50"
subm pile	30°17'05.77"	81°42'06.43"
subm pile	30°17'05.25"	81°42'06.39"

3) The charted note, Shoaling rep 1978, in Latitude 30°17'28.55"N, Longitude 81°42'11.28"W, was investigated by the hydrographer. Present survey depths do not indicate shoaling in this area. It is recommended the charted note be deleted and the area be charted on the present survey.

4) The following charted depths originate with unknown sources and are not considered disproved by the present survey:

<u>Depth (ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
2	30°15'46.93"	081°41'44.62"
1	30°16'39.66"	081°39'57.34"
2	30°17'06.82"	081°42'28.78"
4	30°17'08.55"	081°39'48.41"
1	30°17'09.45"	081°42'28.45"
2	30°17'11.39"	081°42'20.74"
½	30°17'16.86"	081°42'18.59"
2	30°18'09.04"	081°39'32.91"
2	30°18'34.34"	081°40'42.75"
1	30°18'39.31"	081°40'35.40"
2	30°18'52.39"	081°40'32.16"
4	30°18'54.32"	081°39'57.55"

The present survey is adequate to supersede the charted hydrography within the common area.

ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. No additional field work is recommend.

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.

11491 (33rd Edition, Mar 24/01)

H11214

A handwritten signature in black ink, appearing to read 'Chris Wedler', is written over a horizontal line. The signature is stylized and extends to the right of the line.

Christopher Wedler
Physical Scientist
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET

H11214

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Richard W. Blevins

Richard W. Blevins
Cartographer
Atlantic Hydrographic Branch

Date: 6/15/04

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 Evaluation Report.

Approved:

P. Tod Shattgen

P. Tod Shattgen
LCDR, NOAA
Chief, Atlantic Hydrographic Branch

Date: SEPT 16, 2004

Always + SURF check
2/19/04 mcr

