

F00669

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey: Field Examination

Registry Number: F00669

LOCALITY

State(s): South Carolina

General Locality: Approaches to Charleston

Sub-locality: Vicinity of Shem Creek

2015

CHIEF OF PARTY
Shepard M. Smith, CAPT/NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

F00669

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State(s): **South Carolina**

General Locality: **Approaches to Charleston**

Sub-Locality: **Vicinity of Shem Creek**

Scale: **10000**

Dates of Survey: **10/28/2015**

Instructions Dated: **05/15/2015**

Project Number: **OPR-G380-TJ-15**

Field Unit: **NOAA Ship *Thomas Jefferson***

Chief of Party: **Shepard M. Smith, CAPT/NOAA**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via <http://www.ngdc.noaa.gov/>.



UNITED STATES DEPARTMENT COMMERCE

National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
NOAA Ship Thomas Jefferson S-222
439 West York Street
Norfolk, VA 23510-1114

October 28, 2015

Memorandum For: LCDR Matthew Jaskoski, NOAA
Chief, Atlantic Hydrographic Branch

From: Allison Stone
Senior Survey Technician, NOAA Ship Thomas Jefferson
Allison Clare Stone

Through: Captain Shepard M. Smith, NOAA
Commanding Officer, NOAA Ship Thomas Jefferson
c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=SMITH.SHEPARD.M.1006 778930 2015.10.28 21:55:28 Z

Subject: Shem Creek, SC shoal investigations

While at anchor in Charleston Harbor, SC on October 28, 2015, the NOAA Ship Thomas Jefferson sent launch 3101 to investigate reports of shoaling in Shem Creek.

There were two reported problems with the chart. First, there was a report from an ActiveCaptain user that the Shem Creek entrance channel had shoaled in for the first 1000 yards or so.

Shoaling

Details	Comments
Name	
Name	Shoaling
Position	
Latitude: 32°46.181'N	
Longitude: 079°52.318'W	
Description	
Shoaling for the first 1,000 yards or so of the Shem Creek entrance channel. Water has shallowed to 6-7 feet MLW. Depths on the western side of the pass are especially shallow at 4' MLW.	



Launch 3101 conducted an investigation with multibeam of the entrance channel, with line spacing of 50m across the channel, along with a centerline and two toe lines. The data is reduced to mean lower low water using ellipsoid referencing and transformed using a separation model supplied with project G380-TJ-15. The data was

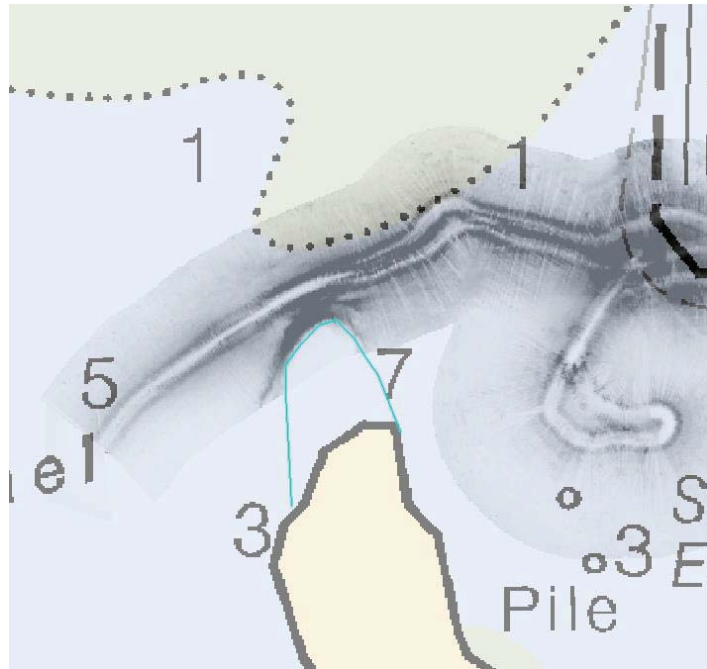
processed in accordance with the data acquisition and processing report applicable to project G380.

We have provided a Caris CSAR file named “ShemCreek_MB_50cm_MLLW” with the project files. *I recommend that this bathy be used to update the soundings and contours within the covered area of the Shem Creek entrance channel. I further recommend that the selection of soundings and contours be done carefully to highlight that the deep water is toward the green side.*



Second, there was a report from a local boater that the western tip of Crab Bank had shifted west, impeding the Hog Island Channel into Shem Creek. This report was easily confirmed by recent orthophoto, which appears to have been taken near high tide, since the charted mudflats are not visible, though they are on other photos.

The launch ran sidescan across the face of the shoal extension, confirming the satellite image extent. *I recommend that the tip northwestern tip of Crab Bank be extended as supported by the sidescan, and that the charted “7” sounding be removed. I further recommend that an appropriate sounding be chosen from the supplied depth grid to place near the tip of the bank to indicate the location of the deep water.*



The records of this investigation are organized in accordance with the NOAA field procedures manual. However, due to the limited nature of this project, the records are necessarily less complete than a full basic survey.

APPENDIX I

TIDES AND WATER LEVELS

The data for survey F00669 is reduced to mean lower low water (MLLW) using ellipsoid referencing and transformed using the separation model supplied by NOAA for project G380-TJ-15.

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE



Shoreline request for survey F00669

James J. Miller <james.j.miller@noaa.gov>

Wed, Nov 4, 2015 e

To: Mike Espey <mike.espey@noaa.gov>

Cc: Tara Wallace - NOAA Federal <tara.wallace@noaa.gov>, "_NOS NGS.Shoreline.Request" <ngs.shoreline.request@noaa.gov>, Matthew Jaskoski - NOAA Federal <matthew.jaskoski@noaa.gov>, Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, Edward Owens - NOAA Federal <edward.owens@noaa.gov>, Ken Forster <ken.forster@noaa.gov>, Eric Berkowitz - NOAA Federal <eric.w.berkowitz@noaa.gov>

Hi Mike,

That sounds like an excellent plan. AHB will not include any shoreline edits in the HCell.

Thanks,
James

James J. Miller
Physical Scientist
NOAA Office of Coast Survey
Atlantic Hydrographic Branch
439 W York St | Norfolk, VA | 23510
757-441-6746 x 111

On Wed, Nov 4, 2015 at 11:56 AM, Mike Espey <mike.espey@noaa.gov> wrote:

James + MCD,

RSD investigation of the area of the hydro survey reveals significant shoreline discrepancies along the entire extent of "Crab Bank", a small sandy island about 1/2 mile from the main shipping channel. Simply adding an approx shoreline at the northern end of the island in the vicinity of the hydro survey wouldn't improve the chart as much as accurately revising the shoreline for the whole island, which RSD can accomplish using the recently acquired imagery for SC1502-CS-N. If this proposal sounds acceptable we'll plan to deliver a GC in December if possible.

Thx
Mike

On 11/3/2015 2:17 PM, James J. Miller wrote:

Hi everyone,

Thank you Mike and Tara for the information and timely reply. Here is a survey outline in .000 and shapefile formats (projected in Geographic Lat/Long NAD83). I have also attached the initial report from the TJ that describes this field investigation. The ship was anchored in Charleston Harbor due to a storm, so they sent launch 3101 to investigate some reported shoaling in the vicinity of Shem Creek. The TJ did not coordinate with RSD because it was an unplanned survey of opportunity.

AHB plans to submit the HCell before the end of November, so it should arrive at MCD by December 15. It is a very small area with a handful of soundings to be updated. There are no dangers to navigation. AHB assessed the survey to be moderate to high priority, and we are hoping for a relatively short ping-to-chart time.

Respectfully,
James

James J. Miller
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On Tue, Nov 3, 2015 at 6:43 AM, Tara Wallace - NOAA Federal <tara.wallace@noaa.gov> wrote:

Good morning All ~

What are the limits of this survey? Also, when is the potential date of delivery to MCD? We were surprised to see that this area hadn't been coordinated with RSD beforehand. Has this area become a priority?

Thanks,
Tara

On Mon, Nov 2, 2015 at 3:24 PM, Mike Espey <mike.espey@noaa.gov> wrote:

Hello James,

Thank you for your request. RSD has not compiled shoreline for this area recently, but only a week ago we acquired imagery for a CSCAP change analysis project for Charleston and approaches (SC1502-CS-N) which includes this area. We've asked MCD what their preference is for addressing the issue you've brought to our attention.

Regards,
Mike Espey

On 10/30/2015 1:18 PM, James J. Miller wrote:

To whom it may concern,

Survey F00669 is currently undergoing survey acceptance review at AHB and contains shoreline discrepancies. The NOAA Shoreline Data Explorer at <http://www.ngs.noaa.gov/NSDE/> does not have more recent shoreline for the survey area. The most recent orthoimagery available from the USGS National Map Viewer at <http://viewer.nationalmap.gov/viewer/> confirms that the current shoreline is mischarted.

Survey: F00669
Project: OPR-G380-TJ-15
State: SC
General Locality: Approaches to Charleston
Sub-locality: Vicinity of Shem Creek
Field Unit: NOAA Ship *Thomas Jefferson*
Dates of Survey: 10/28/2015

Affected Land Area(s):
Crab Bank, vicinity of Shem Creek, Mt. Pleasant, SC

Affected Raster Chart(s):

11524

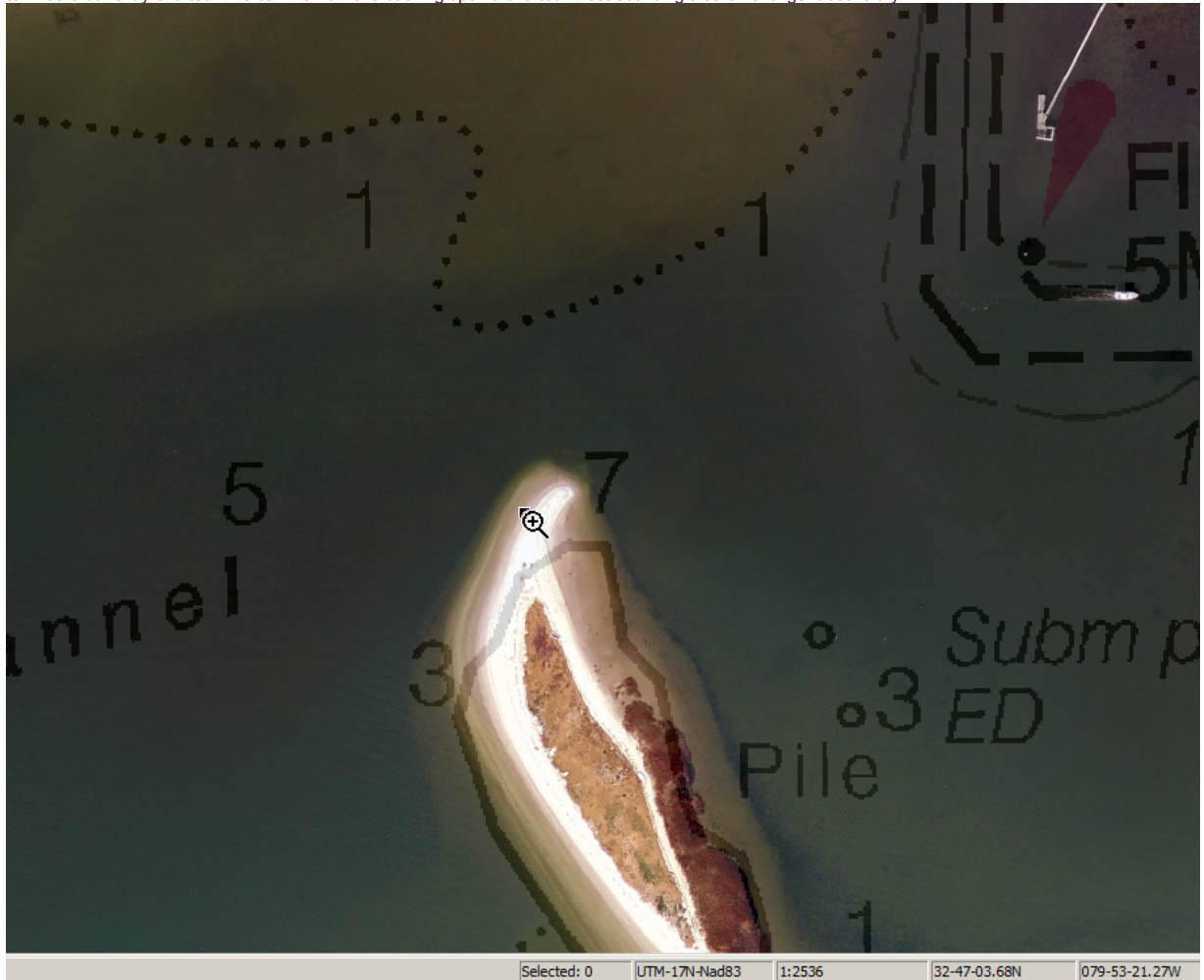
Survey Extents:

NW corner: 32-47-13.72N, 079-53-33.22W
SE corner: 32-46-06.53N, 079-52-11.04W

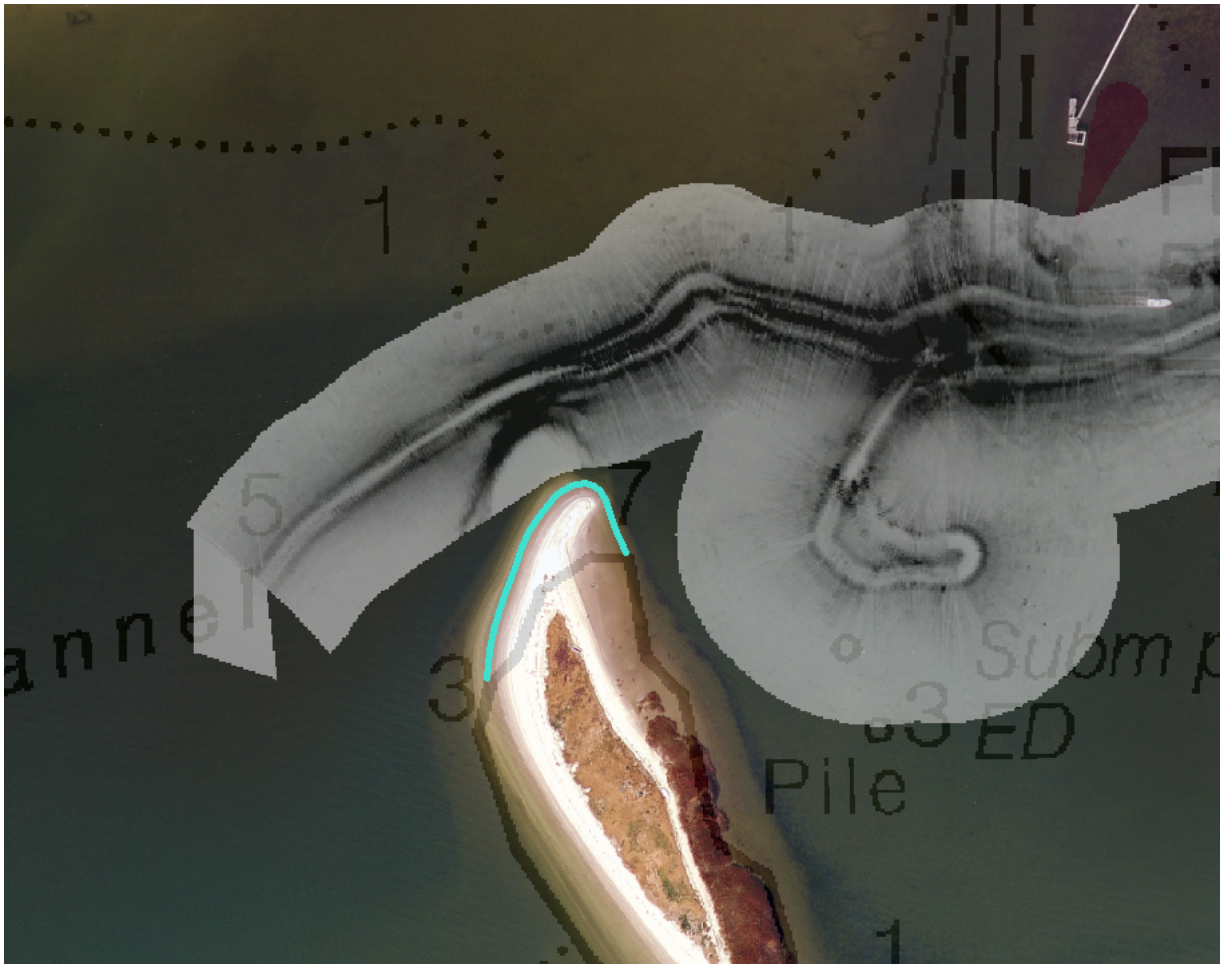
Orthoimagery:

USGS High Resolution Orthoimagery
Imagery acquired 01/19/2012 - 03/06/2012
30 cm resolution

AHB is inquiring whether updated shoreline is already available for this area. The northern end of Crab Bank has migrated roughly 45 meters northward compared to what is currently charted. The bank is now encroaching upon a charted 7 foot sounding that is no longer trustworthy.



Side scan data acquired by the *Thomas Jefferson* confirms the shoaling. AHB plans to supersede the 7 foot sounding with some updated soundings from multibeam data acquired by the *Thomas Jefferson*. If updated shoreline data is not available, AHB can submit an approximate shoreline update (teal line) with the HCell for F00669, which would be charted as a hashed line until it can be officially updated by RSD at a later date.



Respectfully,
James

James J. Miller
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Tara Wallace, Branch Chief
Nautical Data Branch, Marine Chart Division
Office of Coast Survey, National Ocean Service
(301) 713-2737 ext. 123



APPROVAL PAGE

F00669

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- F00669_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: _____

Lieutenant Commander Matthew Jaskoski, NOAA

Chief, Atlantic Hydrographic Branch