



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
NOAA Marine and Aviation Operations  
Marine Operations Center  
439 W. York Street  
Norfolk, VA 23510-1114

April 5, 2017

MEMORANDUM FOR: Commander Christiaan Van Westendorp, NOAA  
Commanding Officer, NOAA Ship *Thomas Jefferson*

FROM: Captain Scott M. Sirois, NOAA  
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for TJ-17-01  
Approaches to Savannah

Attached is the final Project Instruction for TJ-17-01, Approaches to Savannah, which is scheduled aboard NOAA Ship *Thomas Jefferson* during the period of May - June, 2017. Of the 30 DAS scheduled for this project, 30 days are funded by a Line Office Allocation. This project is estimated to exhibit a Medium Operational Tempo. Acknowledge receipt of these instructions via e-mail to [OpsMgr.MOA@noaa.gov](mailto:OpsMgr.MOA@noaa.gov) at Marine Operations Center-Atlantic.




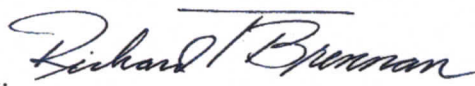


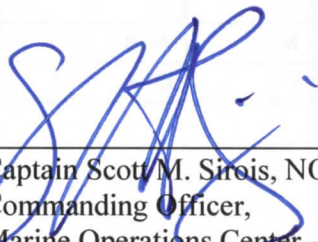
UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Office of Coast Survey  
Silver Spring, Maryland 20910-3282

## Final Project Instruction

**Date Submitted:** March 22, 2017  
**Platform:** NOAA Ship *Thomas Jefferson*  
**Project Number:** TJ-17-01  
**Project Title:** Approaches to Savannah, GA  
**Project Dates:** May 2017 to June 2017

Prepared by:  Dated: 3/24/2017  
Lieutenant Russell Quintero, NOAA  
Chief, Operations Branch  
Hydrographic Surveys Division

Approved by:  Dated: 3/24/2017  
Captain Richard Brennan, NOAA  
Chief, Hydrographic Surveys Division  
Office of Coast Survey

Approved by:  Dated: 4/13/17  
Captain Scott M. Sirois, NOAA  
Commanding Officer,  
Marine Operations Center - Atlantic



**I. Overview**

**A. Brief Summary and Project Period**

This survey is scheduled to begin May 2017 and end in June 2017. This project is being conducted in support of NOAA’s Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce survey backlog in the area.

**B. Days at sea (DAS)**

Of the 30 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 30 DAS are funded by a Line Office Allocation, 0 DAS are Program Funded, and 0 DAS are Other Agency funded. This project is estimated to exhibit a High Operational Tempo.

**C. Operating Area**

The project area is located off the coast of South Carolina and Georgia, approaching Savannah. A map of the project area can be found with the detailed project instructions appended to these instructions.

**D. Summary of Objectives**

This project will support the following primary mission:  
To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

**E. Participating Institutions**

Office of Coast Survey

**F. Personnel/Science Party: name, title, gender, affiliation, and nationality**

<b>Name (Last, First)</b>	<b>Title</b>	<b>Date Aboard</b>	<b>Date Disembark</b>	<b>Gender</b>	<b>Affiliation</b>		<b>Nationality</b>
TBD	PS	5/1/2017	5/12/2017	M	AHB		US
Robinson, Starla	PS	5/15/2017	5/24/2017	F	OPS		US

G. Administrative

1. Points of Contacts:

Principal Investigator:  
Lieutenant Russell Quintero, NOAA  
Chief, Operations Branch Hydrographic Surveys Division  
1315 East West Hwy, #6854  
Silver Spring, MD 20910  
301-713-2702 x112  
[russell.quintero@noaa.gov](mailto:russell.quintero@noaa.gov)

Project Manager:  
Starla Robinson  
Physical Scientist, Operations Branch  
Hydrographic Surveys Division  
1315 East West Hwy, #6709  
Silver Spring, MD 20910  
301-713-2702 x125  
[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)

Back up Project Manager:  
Kathryn Pridgen  
Physical Scientist, Operations Branch  
Hydrographic Surveys Division 1315 East West  
Hwy, #6854 Silver Spring, MD 20910  
301-713-2702 x178  
[Kathryn.Pridgen@noaa.gov](mailto:Kathryn.Pridgen@noaa.gov)

Chief Scientist:  
CDR Christiaan Van Westendorp, NOAA  
Commanding Officer, NOAA Ship Thomas Jefferson  
439 West York Street Norfolk, VA 23510-1114  
(757) 647-0187  
[CO.Thomas.Jefferson@noaa.gov](mailto:CO.Thomas.Jefferson@noaa.gov)

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

The Office of Coast Survey is sensitive to the potential effects of its operations on the physical, biological, and cultural marine environment. In accordance with the National Environmental Policy Act, Coast Survey prepared a Programmatic Environmental Assessment to gauge the environmental impacts resulting from surveying and other data-gathering activities. As a result, the National Ocean Service has published a Finding of No

Significant Impact (FONSI) for the Office of Coast Survey program of conducting hydrographic surveys for the calendar years 2013 - 2018.

In addition The Office of Coast Survey has implemented Best Management Practices (BMPs) based on the ESA mitigation and monitoring measures agreed to between the OCS Hydrographic Services Division (HSD) and the NMFS Office of Protected Resources (OPR-ESA) and documented in the April 30, 2013 Biological Opinion. They were adopted in the context of the ESA, but include BMPs for marine mammals listed in the ESA (“depleted” under MMPA).

For further information on the BMPs, please refer to the Environmental Compliance Section of the Hydrographic Survey Project Instructions. For further information on OCS Regulations and Policies go to: <http://www.nauticalcharts.noaa.gov/Legal/>

## II. Operations

The Commanding Officer is responsible for ensuring the scientific staff are trained in planned operations and are knowledgeable of project objectives and priorities. The Commanding Officer is responsible for ensuring all operations conform to the ship’s accepted practices and procedures.

### A. Project Itinerary:

Itinerary will be based upon the ship’s schedule and executed under the direction of the Commanding Officer. Every effort shall be made by the Commanding Officer to maximize the operational efficiency of assigned projects. Please refer to ships sailing schedule below:

DEP: 5/1/2017	Mon	Norfolk, VA	TJ-17-01 Leg 4
ARR 5/12/2017	Fri	Savannah, GA	Approaches to Savannah, GA
DEP: 5/15/2017	Mon	Savannah, GA	TJ-17-01 Leg 5
ARR 5/26/2017	Fri	Norfolk, VA	Approaches to Savannah, GA
DEP: 5/30/2017	Tue	Norfolk, VA	TJ-17-01 Leg 6
ARR 6/4/2017	Sun	--	Approaches to Savannah, GA
DEP: 6/5/2017	Mon	--	TJ-17-02 Leg 1
ARR 6/16/2017	Fri	Galveston, TX	Houston/Galveston Approaches

### B. Staging and Destaging: N/A

### C. Operations to be Conducted:

Hydrographic survey operations shall be conducted per the appended project instructions. The ship and/or survey launches shall operate for a total of 24 hr/day for data acquisition and

project field support. To achieve this, the Commanding Officer may elect to run 24 hr ship survey operations for short or extended periods of time with reduced launch operations as long as the total hours per day are achieved.

D. Dive Plan

Dives are not planned for this project

E. Applicable Restrictions

Conditions which preclude normal operations:

- Poor weather conditions
- Equipment failure
- Safety concerns
- Personnel shortage

**III. Equipment**

A. Equipment and Capabilities provided by the ship (itemized)

1. Two survey launches fully-outfitted with hydrographic survey equipment to support multibeam and/or side scan and/or vertical beam sonar survey operations.
2. Ship fully-outfitted with hydrographic survey equipment to support multibeam and/or side scan sonar survey operations.
3. Personnel to staff and operate the survey equipment on the launches and ship for the required operational hours/day described in Section II. C. Operations to be Conducted.
4. A fully-staffed survey department to efficiently manage the project's data processing requirements.

B. Equipment and Capabilities provided by the scientists (itemized)

**IV. Hazardous Materials**

A. Policy and Compliance

No Hazardous Materials are being brought aboard the ship for this project.

- B. Radioactive Materials  
No Radioactive Isotopes are planned for this project

## V. Additional Projects

- A. Supplementary (“Piggyback”) Projects  
No Supplementary Projects are planned
- B. NOAA Fleet Ancillary Projects  
No NOAA Fleet Ancillary Projects are planned

## VI. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships will conform to NAO 216-101 *Ocean Data Acquisitions* and NAO 212-15 *Management of Environmental Data and Information*. To guide the implementation of these NAOs, NOAA’s Environmental Data Management Committee (EDMC) provides the *NOAA Data Documentation Procedural Directive* (data documentation) and *NOAA Data Management Planning Procedural Directive* (preparation of Data Management Plans). OMAO is developing procedures and allocating resources to manage OMAO data and Programs are encouraged to do the same for their Project data.

## VII. Meetings, Vessel Familiarization, and Project Evaluations

- A. Pre-Project Meeting: The Principal Investigator and the Commanding Officer will conduct a meeting of pertinent members of the scientific party and ship’s crew to discuss required equipment, planned operations, concerns, and establish mitigation strategies for all concerns. This meeting shall be conducted before the beginning of the project with sufficient time to allow for preparation of the ship and project personnel.
- B. Vessel Familiarization Meeting: The Commanding Officer is responsible for ensuring scientific personnel are familiarized with applicable sections of the standing orders and vessel protocols, e.g., meals, watches, etiquette, drills, etc. A vessel familiarization meeting shall be conducted in the first 24 hours of the project’s start and is normally presented by the ship’s Operations Officer.
- C. Post-Project Meeting: The Commanding Officer is responsible for conducting a meeting no earlier than 24 hrs before or 7 days after the completion of a project to discuss the overall success and short comings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements shall be discussed and mitigations for future projects

will be documented for future use. This meeting shall be attended by the ship's officers, applicable crew, the Commanding Officer, and members of the scientific party and is normally arranged by the Operations Officer.

D. Project Evaluation Report

Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at [https://sites.google.com/a/noaa.gov/omao-intranet- dev/operations/marine/customer-satisfaction-survey](https://sites.google.com/a/noaa.gov/omao-intranet-dev/operations/marine/customer-satisfaction-survey) and provides a "Submit" button at the end of the form. It is also located at [https://docs.google.com/a/noaa.gov/forms/d/1a5hCCkgIwaSII4DmrHPudAehQ9HqhRqY3J\\_FXqbJp9g/viewform](https://docs.google.com/a/noaa.gov/forms/d/1a5hCCkgIwaSII4DmrHPudAehQ9HqhRqY3J_FXqbJp9g/viewform). Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships, specific concerns and praises are followed up on while not divulging the identity of the evaluator.

**VIII. Miscellaneous**

A. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the project, and ending two hours after the termination of the project. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship's command at least seven days prior to the project.

Berthing requirements, including number and gender of the scientific party, will be provided to the Commanding Officer by the Principal Investigator. The Commanding Officer will work on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Principal Investigator will ensure that all non NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Principal Investigator to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the



galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 17, 2000 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

#### B. Medical Forms and Emergency Contacts

The NOAA Health Services Questionnaire (NHSQ, NF 57-10-01 (3-14)) must be completed in advance by each participating scientist. The NHSQ can be obtained from <http://www.corporateservices.noaa.gov/noaafoms/efoms/nf57-10-01.pdf>.

All NHSQs submitted after March 1, 2014 must be accompanied by [NOAA Form \(NF\) 57-10-02](#) - Tuberculosis Screening Document in compliance with [OMAO Policy 1008](#) (Tuberculosis Protection Program).

The completed forms should be sent to the Regional Director of Health Services at the applicable Marine Operations Center. The NHSQ and Tuberculosis Screening Document should reach the Health Services Office no later than 4 weeks prior to the start of the project to allow time for the participant to obtain and submit additional information should health services require it, before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of either form. Ensure to fully complete each form and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

The participant can mail, fax, or email the forms to the contact information below. Participants should take precautions to protect their Personally Identifiable Information (PII) and medical information and ensure all correspondence adheres to DOC guidance ([http://ocio.os.doc.gov/ITPolicyandPrograms/IT\\_Privacy/PROD01\\_008240](http://ocio.os.doc.gov/ITPolicyandPrograms/IT_Privacy/PROD01_008240)).

The only secure email process approved by NOAA is [Accellion Secure File Transfer](#) which requires the sender to setup an account. [Accellion's Web Users Guide](#) is a valuable aid in using this service, however to reduce cost the DOC contract doesn't provide for automatically issuing full functioning accounts. To receive access to a "Send Tab", after your Accellion account has been established send an email from the associated email account to [accellionAlerts@doc.gov](mailto:accellionAlerts@doc.gov) requesting access to the "Send Tab" function. They will notify you via email usually within 1 business day of your approval. The "Send Tab" function will be accessible for 30 days.

Contact information:

Regional Director of Health Services Marine Operations Center-Atlantic

439 W. York Street Norfolk, VA 23510

Telephone 757-441-6320

Fax 757-441-3760

Email [MOA.Health.Services@noaa.gov](mailto:MOA.Health.Services@noaa.gov)

Prior to departure, the Executive Officer will obtain an electronic listing of emergency contacts for all members of the scientific party, with the following information: contact name, address, relationship to member, and telephone number.

C. Shipboard Safety

Hard hats are required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when required.

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs) outside of private berthing areas is not permitted. At the discretion of the ship CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship's Operations Officer should be consulted by the Principal Investigator to ensure members of the scientific party report aboard with the proper attire.

D. Communications

A progress report on operations prepared by the Commanding Officer may be relayed to the program office. The ship's primary means of communication with the Marine Operations Center is via email and the Very Small Aperture Terminal (VSAT) link.

Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged through the ship's Commanding Officer at least 30 days in advance.

E. IT Security

Any computer that will be hooked into the ship's network must comply with the *OMAO Fleet IT Security Policy* 1.1 (November 4, 2005) prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

- (1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.

(2) Installation of the latest critical operating system security patches.

(3) No external public Internet Service Provider (ISP) connections. Completion of the

above requirements prior to boarding the ship is required.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms

Foreign National access to the NOAA ship or Federal Facilities is not required for this project.

## **VIII. Appendices**

1. Primary Project Instructions: OPR-G329-TJ-17, Approaches to Savannah.

# Hydrographic Survey Project Instructions

<b>Project Name:</b>	Approaches to Savannah
<b>Project Number:</b>	OPR-G329-TJ-17
<b>Assigned Field Unit:</b>	NOAA Ship <i>Thomas Jefferson</i>
<b>Assigned Processing Branch:</b>	Atlantic Hydrographic Branch
<b>Signed Date:</b>	03/22/2017
<b>Project Instructions Version:</b>	Final
<b>Planned Acquisition Time:</b>	Start Date: 05/2017 End Date: 06/2017
<b>Delivery Dates:</b>	120 days from completion of data acquisition.

**Purpose and Location:**

Approaches to Savannah will update the chart to meet the needs of larger ships transiting into Savannah Harbor. The Savannah Harbor Expansion Project (SHEP) is being deepened to prepare for Neo-Panamax vessels, whose increased capacity is expected net more than \$174 million in annual benefits to the nation<sup>1</sup>. Larger ships generate more business for US companies, but it also means that the ship will be passing closer to the seafloor. The Approaches to Savannah survey will provide the data to reduce risk to the transport of those goods.

In addition to supporting the SHEP, Approaches to Savannah will address concerns of migrating shoals and improving the positional accuracy of other dangers to navigation. The Port of Savannah handled 10.3% of all U.S. containerized exports in 2015. The total economic impact of Georgia's deepwater ports is \$84.1 billion, and support more than 369,000 jobs providing approximately \$20.4 billion in personal income annually<sup>2</sup>. This survey will support the navigational safety commercial and recreational ship traffic at the mouth of the Savannah River.

<sup>1</sup>US Army Corps of Engineers  
<sup>2</sup>"Double-Digit Growth for US Ports". Port Technology. February 27, 2017

**Supporting Documents:**

Hydrography shall consist of Navigable Area Surveys in accordance with the following support documents.

NOS Hydrographic Surveys Specifications and Deliverables Manual (HSSD), March 2016

NOS Field Procedures Manual for Hydrographic Surveying (FPM), April, 2014

Hydrographic Survey Technical Directive HTD 2016-2 Configuration Management

Hydrographic Survey Technical Directive HTD 2016-3 Horizontal Datums

**PERSONNEL SAFETY AND DATA QUALITY SHALL ALWAYS BE EMPHASIZED OVER DATA QUANTITY! THE HYDROGRAPHER SHALL NEVER SUBJECT PERSONNEL OR BOATS TO UNDUE RISKS AND HAZARDS.**

<b>Registry Details:</b>						
<b>General Locality:</b> Approaches to Savannah						
<i>Registry Number</i>	<i>Sheet Number</i>	<i>Sublocality</i>	<i>State or Territory</i>	<i>Scale</i>	<i>Estimated SNM</i>	<i>Instructions</i>
H12961	1	Northwest Savannah	Georgia South Carolina	20000	28	Object Detection
H12962	2	South Savannah	Georgia South Carolina	20000	54	Object Detection
H12963	4	Southwest Savannah	Georgia	20000	49	Object Detection
F00690	3	Offshore-Savannah to Charleston Features	Georgia South Carolina	20000	1	Feature Investigation, Object detection with water column

<b>Limits &amp; Coverage:</b>	
<b>Inshore Limit:</b> There is no inshore limit defined for this survey.	
<b>Coverage Requirements:</b>	
<i>Coverage Water Depth</i>	<i>Coverage Required</i>
H12961, H12962, H12963	Object Detection Coverage (refer to HSSD Section 5.2.2.2 and Section 6.2)
F00693	Feature Disproval with water column acquisition (refer to HSSD Section 7.3.4 and Section 6.2)

### **Assigned Tasks**

<b>Acknowledgement:</b>
The project manager for this project is Starla Robinson. Contact information for the project manager may be found in the User Contacts section of this document. The field unit shall acknowledge receipt of these instructions and submit any comments or questions via email to the project manager. Additionally, the project manager shall be included on all discussions or correspondence involving issues concerning the project.

<b>Environmental Compliance Requirements</b>
Comply with the Environmental Compliance requirements and Best Management Practices (BMPs) in Section 1.4 of the HSSD. Please see all Best Management Practices (BMPs) listed and the Critical Habitat map at the end of the Project Instructions, and the Environmental Review Memo included with the project data in the Consults folder.

**Aids to Navigation (ATONs):**

There are no ATONs specifically assigned for this project. Any ATONs located within the survey area should be verified so that they serve their intended purpose in accordance with Section 7.2 of the HSSD.

**Maritime Boundary Points (MBPs):**

There are no Maritime Boundary investigation requirements for this project.

**Bottom Samples:**

There is no Bottom Sample requirement for this project.

**Chart Comparison:**

Perform a chart comparison in accordance with D.1 Chart Comparison, under Section 8.1.4 of the HSSD. Use only the latest editions of the largest scale NOS charts covering the project area. Resolve any discrepancies identified in the field and explain them in the Descriptive Report. Some charts listed may have larger scale sections to which survey data must be compared. The Triangle Rule function (available in QC Tools) may be used to compare survey soundings (must be .000) to the current ENC, and this may be helpful to alert the user to any shoal points or potential dangers to navigation.

**Affected Raster Charts**

<i>Chart Number</i>	<i>Scale</i>	<i>Edition Number</i>	<i>Edition Date</i>	<i>Kapp Number</i>	<i>LNK Date</i>	<i>NM Date</i>
11512	40000	64	08/2014	231	02/21/2017	02/25/2017
11505	40000	5	08/2014	290	02/21/2017	02/11/2017
11509	80000	32	02/2012	254	02/21/2017	02/11/2017
11480	449659	41	11/2010	376	02/21/2017	02/11/2017

**Affected ENCs**

<i>ENC Name</i>	<i>Scale</i>	<i>Edition</i>	<i>Update Application Date</i>	<i>Issue Date</i>	<i>Preliminary</i>
US5GA20M	40000	42	06/07/2016	06/07/2016	NO
US4SC22M	80000	17	05/17/2016	05/17/2016	NO
US4GA17M	80000	9	10/20/2011	10/20/2011	NO
US3GA10	449659	20	08/03/2011	08/03/2011	NO

**Coast Pilot:**

Perform a Coast Pilot Review as described in HSSD Section 8.1.3.

**Dangers to Navigation (DTONs):**

Generate DTON reports in accordance with Section 1.5 of the HSSD. DTON reports should be sent to ocs.ndb@noaa.gov with a courtesy copy to the project manager. It is of paramount importance that DTONs be reported as soon as possible.

**Junctions:**

Perform a junction analysis with the surveys listed below and between current project sheets. Refer to HSSD Section 8.1.4 Junction guidance.

<i>Registry Number</i>	<i>Scale</i>	<i>Year</i>	<i>Platform</i>	<i>Relative Location</i>
H12960	20000	2016	NOAA Ship <i>Thomas Jefferson</i>	N

**Progress Reports:**

Submit weekly (refer to HSSD 8.1.1.1) and monthly (refer to HSSD 8.1.1.2) progress reports.

**Survey Outlines:**

Generate and submit a survey outline in accordance with Section 8.1.2 of the HSSD.

**Horizontal Control Requirements:**

Comply with the horizontal control requirements in Section 3 of the HSSD.

***3P or 5P***

This project has a requirement to acquire survey data vertically-referenced to the ellipsoid. Based on analysis of existing infrastructure, this will most likely be achieved through a SBAS subscription using a 3P processing solution.

**Vertical Control Requirements:**

Comply with the vertical control requirements in Section 4 of the HSSD.

***Discrete Zoning***

Comply with the requirements from CO-OPS which are included with the project data from the Operations Branch. Submit surveys with final approved water levels applied. Contact the Operations Branch if this causes the survey to miss a submission deadline.

### ***Ellipsoidally-Referenced Survey via VDATUM***

This project has a requirement to acquire survey data vertically referenced to the ellipsoid. Based on analysis of existing infrastructure, this will most likely be achieved through a SBAS subscription (MarineStar) using a 3P processing solution. The field unit shall use a VDatum separation model to realize chart datum via the ellipsoid.

#### ***VDATUM Model***

<i>VDatum Version</i>	<i>Geoid</i>	<i>Area</i>	<i>Area Version</i>	<i>Separation Uncertainty</i>
3.6.1	2012	Georgia/South Carolina – Sapelo Island GA to the SC/NC border		15.7 centimeters

#### ***NWLON Gauges***

<i>Operating Water Level Station</i>	<i>Station ID</i>
Fort Pulaski	8670870

#### **Orthometric Imagery:**

No Orthometric Imagery has been provided for this project.

#### **Shoreline and Nearshore Features:**

The CSF for this project is composed from ENC US5GA20M, US4GA17M, and US3GA10M. Assigned CSF features originate from Chart 11505, 11509, 11480, BP-189175, and CGD reports. All other submerged or visible cultural features inside the limit of survey shall be verified. Sixteen approximate features have been assigned outside the sheet boundaries for disproval. A disproval radius is defined in the CSF for each feature. Submit a Final Feature File in accordance with Section 7 of the HSSD. Contact the HSD Project Manager if there are any questions regarding feature assignments and feature management.

#### **Special Data Handling**

Public Relations: Submit Coast Survey blog content as per the attached guidance, at least once per project.



## **User Contacts**

*The following primary offices and persons shall be contacted at or near the beginning and end of the field operations to discuss survey objectives and accomplishment (Mandatory) or are listed for contact at the discretion of the Commanding Officer (Reference).*

### **Primary Project Manager**

Starla Robinson

NOAA

*Phone:* 301-713-2700 x125

*Email:* Starla.Robinson@noaa.gov

*Obligation:* Mandatory

### **Project Manager Back-up**

Kathryn Pridgen

NOAA

*Phone:* 301-713-2700 x178

*Email:* Kathryn.Pridgen@noaa.gov

*Obligation:* Mandatory

### **NOAA Navigation Manager, Southeast Atlantic Region**

Kyle Ward

NOAA

*Phone:* 843-740-1153

*Fax:* 301-651-4852





*Email:* Kyle.Ward@noaa.gov

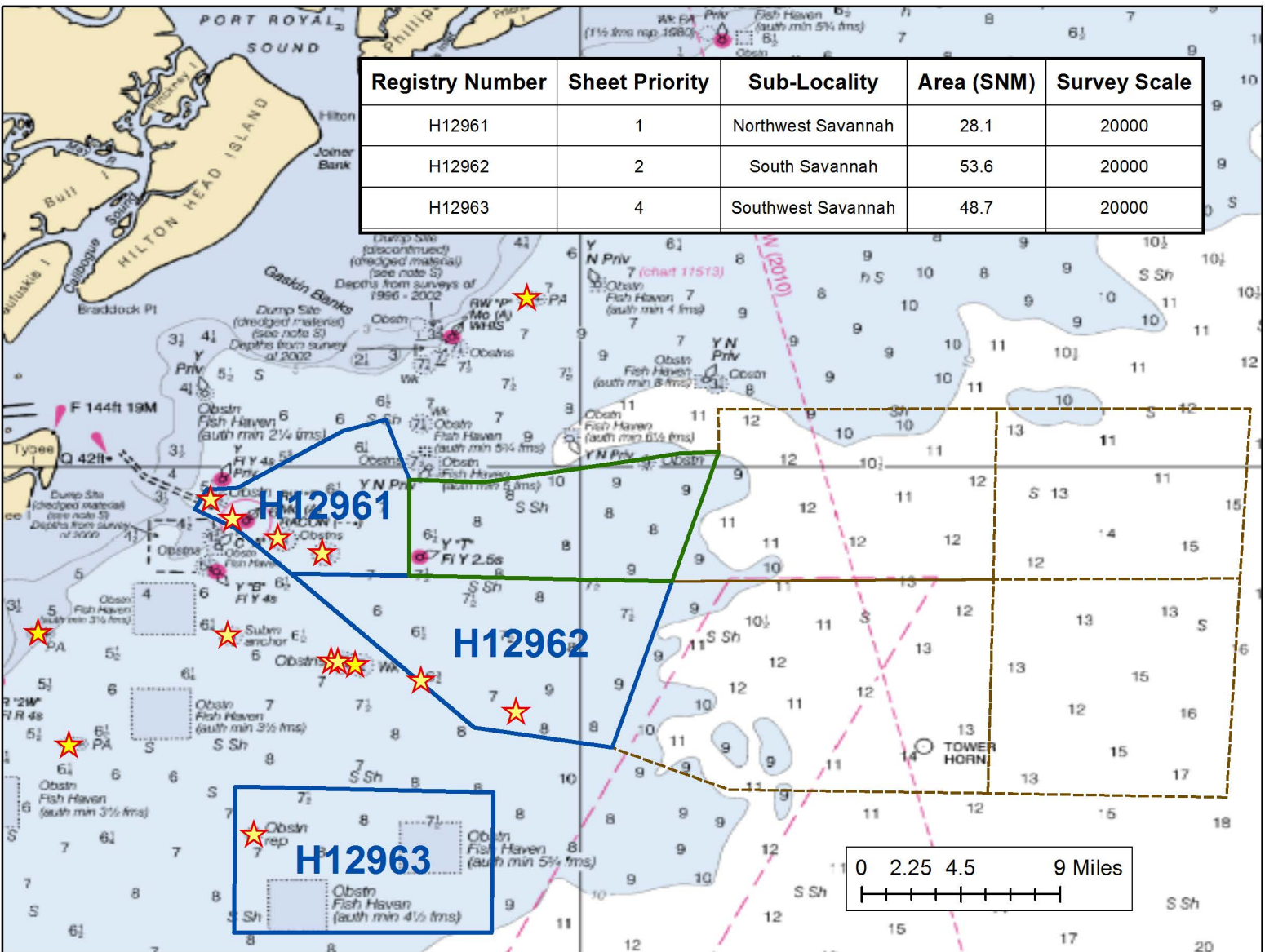
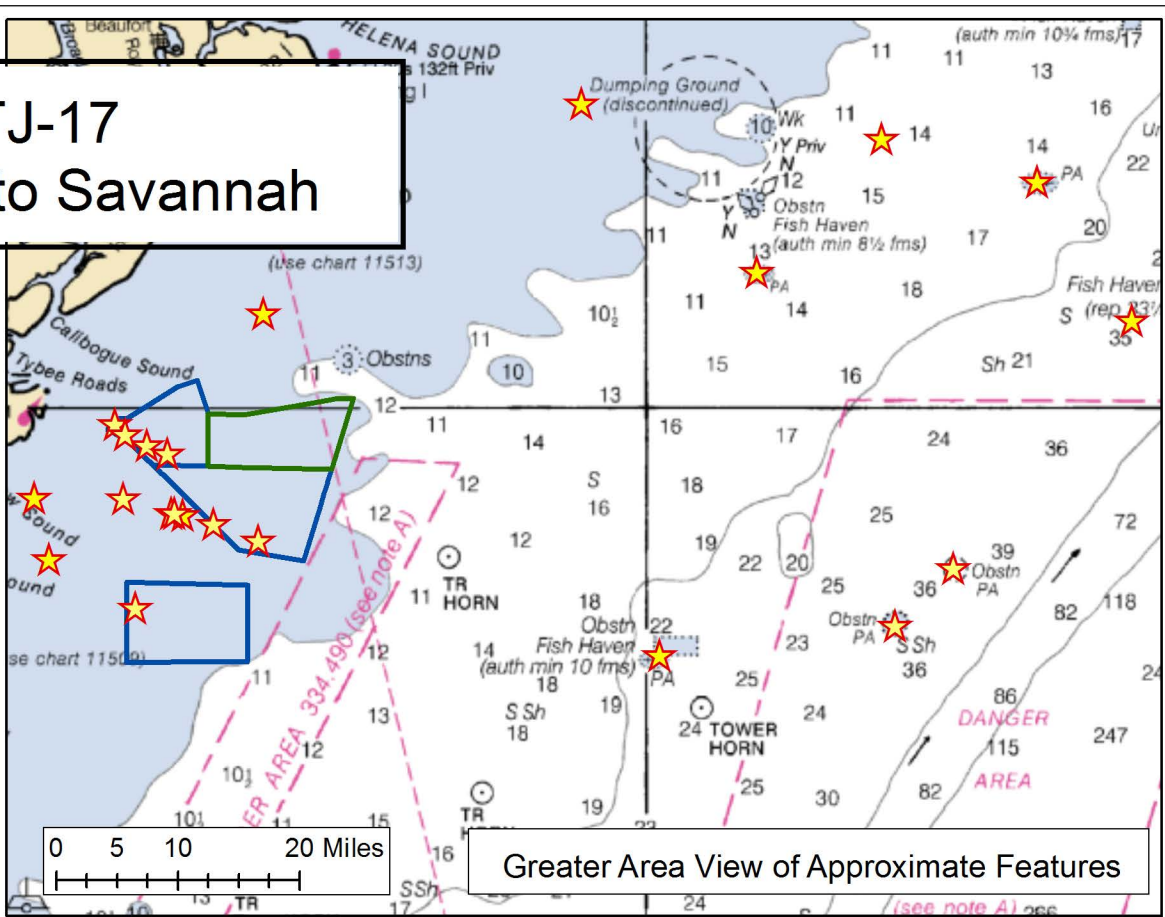
*Obligation:* For Reference

# OPR-G329-TJ-17

## Approaches to Savannah

Total SNM - 135

-  Feature Investigation
-  Junction H12960
-  Survey
-  Additional Sheets



## **PROPOSED BEST MANAGEMENT PRACTICES (BMPs) FOR HYDROGRAPHIC SURVEYS**

The following BMPs are based on the ESA mitigation and monitoring measures agreed to between the OCS Hydrographic Services Division (HSD) and the NMFS Office of Protected Resources (OPR-ESA) and documented in the April 30, 2013 Biological Opinion. They were adopted in the context of the ESA, but include BMPs for marine mammals listed in the ESA (“depleted” under MMPA). OCS proposes that these BMPs be applied to all OCS hydro work while MMPA compliance is underway. In all cases BMPs will be communicated to ship and boat crews via project instructions. Contractors will additionally be made aware of BMPs via contract RFPs.

### **Universal BMPs (those to be included in *all* OCS project instructions):**

#### **Vessel Speed Limits**

- Slow speeds (4 – 8 knots) when mapping
- Reduced speeds (<13 knots) when transiting outside of the Great Lakes (**NOTE:** technically this BMP applies only to transits across the ranges of ESA-listed cetaceans, however these ranges cover all OCS operating areas except the Great Lakes – for example see the Blue Whale range at <http://www.nmfs.noaa.gov/pr/pdfs/rangemaps/bluewhale.pdf>)

#### **Echosounder Restrictions**

- Avoid using sonar frequencies < 180 kHz when possible
  - If **multibeam** sonar frequencies < 180 kHz must be employed, use echosounders at ≥ 50 kHz frequencies, with the lowest possible power and ping-rate
  - If **single beam** sonar frequencies < 180 kHz must be employed, use echo sounders at ≥ 30 kHz frequencies, with the lowest possible power and ping-rate and a 12° beam angle.
    - If **single beam** sonar frequencies < 30 kHz must be employed, suspend transmissions of 30 kHz or lower when ESA-listed cetacean species (whales, dolphins, and porpoises) are within hearing range (i.e., the 4.2 meter beam width).

#### **Vessel Maintenance Requirements**

- Meet all EPA Vessel General Permits and Coast Guard requirements
- Use anti-fouling coatings
- Clean hull regularly to remove aquatic nuisance species
- Avoid cleaners with nonylphenols
- Rinse anchor with high-powered hose after retrieval

#### **Anchoring Restrictions**

- Use designated anchorage area when available
- Use mapping data to anchor in mud or sand, to avoid anchoring on corals

- Minimize anchor drag

#### **Visual Monitoring Requirements**

- Maintain trained observers aboard all vessels; 100% observer coverage
- Make species identification keys (for marine mammals, sea turtles, corals, abalone, and seagrasses) available on all vessels

#### **Animal Approach Restrictions**

- Avoid approaching within 200 yards of cetaceans (whales, dolphins, and porpoises), 500 yards for right whales
- Suspend single beam sonar transmissions of 30 kHz when ESA-listed cetaceans (whales, dolphins, and porpoises) are within hearing range (i.e., within the 4.2 meter beam width).
- Avoid approaching within 100 yards of in-water seals and walrus
- When possible, suspend single beam sonar transmissions when ESA-listed seals and walruses are within hearing range (i.e., within the 4.2 meter beam width).
- Avoid approaching within 50 yards of sea turtles

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#### **Additional, Survey-specific BMPs:**

##### **Discharge Restrictions**

- Avoid discharge of ballast water and hull cleaning in designated critical habitat

##### **Animal Approach Restrictions**

- Avoid cetacean (whales, dolphins, and porpoises) critical habitat, when possible

#### **Relevant CFR Passage Links for critical habitats in the vicinity:**

**North Atlantic Right Whale** – Avoid entering when possible during the core calving season (December through March).

CFR: <https://federalregister.gov/a/2016-01633>

Map Source: <http://www.fisheries.noaa.gov/pr/species/mammals/whales/north-atlantic-right-whale.html>

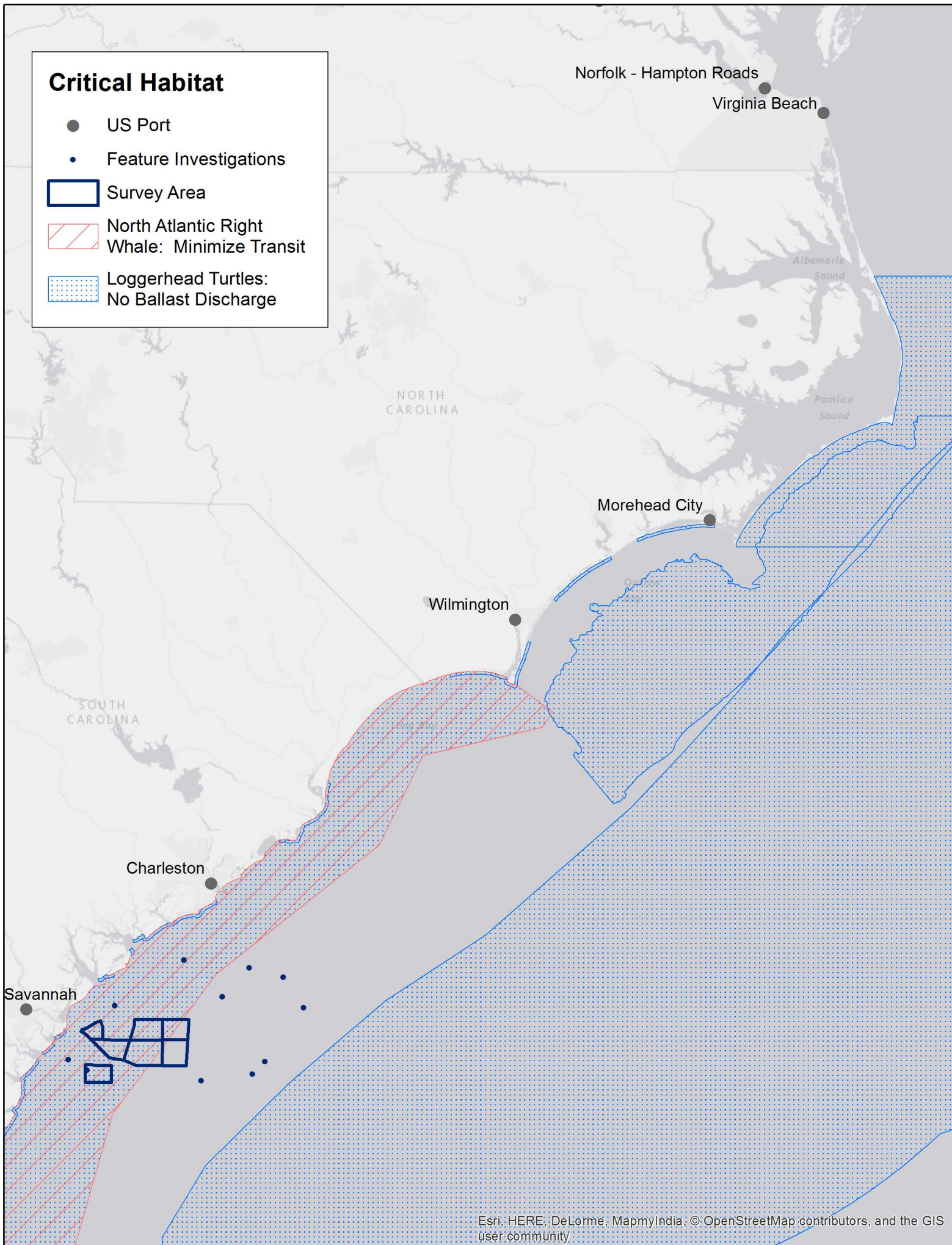
**Loggerhead Turtles** – Nearshore reproductive habitat, unlikely to encounter

CFR: <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr77-4170.pdf>

Map Source: <https://www.federalregister.gov/articles/2014/07/10/2014-15748/endangered-and-threatened-species-critical-habitat-for-the-northwest-atlantic-ocean-loggerhead-sea>

# Critical Habitat

- US Port
- Feature Investigations
- ▭ Survey Area
- ▨ North Atlantic Right Whale: Minimize Transit
- ▩ Loggerhead Turtles: No Ballast Discharge



## **PUBLIC COMMUNICATIONS**

NOAA gives OMAO platforms significant latitude in planning their own public affairs activities. However, the chief science officer is obligated to provide at least one blog post for this project. The blog post should describe, in plain language, one or more of the following project aspects:

- Contribution to the marine transportation system or ocean planning partnerships
- Collaboration with local or regional communities or industry
- Innovative use of science or technology
- Project relationship to historical events or programs
- Other project aspects, mutually agreed between the science officer and Coast Survey communications staff

The length of the blog post should be as long as required to effectively communicate the main idea, but ideally run about 1,000 words. The absolute maximum is 2,500 words. See the blog at <https://noaacoastsurvey.wordpress.com> for examples of writing styles.

Consult with Coast Survey communications staff ([coastsurveycommunications@noaa.gov](mailto:coastsurveycommunications@noaa.gov)) to schedule submission and publication dates. Submit the draft post in Word format. Include the name and rank of the author. Photos and other images must be submitted as separate digital files (not embedded in the Word document – except to illustrate image placement). Include suggested image captions, with all people identified by name. Any photo showing the faces of children under the age of 18 must be accompanied with a NOAA Talent Release Form, signed by the parent or guardian. (Commerce Department-authorized release forms are at: <https://ogc.commerce.gov/page/intellectual-property-1>.)

In most cases, giving a photo credit is at your discretion. For example, if you are using a photograph taken and provided by a NOAA employee while on official duty, that photograph will be considered the property of NOAA and may be used freely with or without credit. The same holds true if you obtained a photograph from another federal agency. However, as a courtesy, you may give a photo credit.

**(REMINDER:** You could be violating the Marine Mammal Protection Act if you disturb animals while taking photos of them. It's against the law to harass mammals, and harassment is defined very broadly to include "causing disruption of behavioral patterns.")

The Coast Survey communications staff will coordinate review and edits of the blog post with the OMAO public affairs office, and will provide suggested final text to the author and science officer, for final review, prior to publication.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/C52), National Ocean Service, NOAA, Silver Spring, Maryland 20910-0202.

POLLUTION REPORTS

Report a spill of oil and hazardous substances to the National Response Center 1-800-424-6022 (24 hr free), or to the Coast Guard facility if telephone contact is impossible (33 CFR 153).

NOTE 5

SA169 Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See Appendix B (33 CFR 153).

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# Preliminary Tidal Zoning for OPR-G329-TJ-2017 Approaches to Savannah, GA

UNITED STATES — EAST COAST

## CHARLESTON LIGHT TO CAPE CANAVERAL

**8670870 FORT PULASKI, GA**  
AT MEAN LOWER LOW WATER

Mercator Projection  
Scale 1:50,000 at Lat. 30° 30'  
North American Datum of 1983  
(World Geodetic System 1984)  
(For offshore navigation only)

For Symbols and Abbreviations see Chart No. 1

HEIGHTS

Heights in feet above Mean High Water.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the U. S. Coast Guard and National Imagery and Mapping Agency.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83) and for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions in the North American Datum of 1927 do not refer to NAD 83 for plotting on this chart.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

RADAR REFLECTORS

Radar reflectors have been placed on floating aids to navigation. Individual reflector identification on these aids has been omitted from this chart.

WARNING

The prudent mariner will not rely solely on an angle aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

NOTE G

Gauge Post National Marine Sanctuary (approved under 16 CFR 903.94)

NOTE H

NORTHERN RIGHT WHALE CRITICAL HABITAT (provisionary area 50 CFR 226.176, 222.32) within AL 2 is listed to appear, any NRTW sightings occur within 500 yards.

**SA172D**  
Reference 8670870

**SA172C**  
Reference 8670870

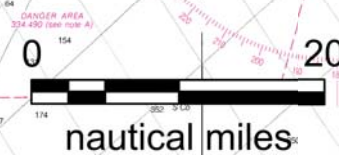
**SA172B**  
Reference 8670870

**SA172A**  
Reference 8670870

**SA190**  
Reference 8670870

**SA169**  
Reference 8670870

**SA170**  
Reference 8670870



**WATER LEVEL INSTRUCTIONS**  
**OPR-G329-TJ-2017 Approaches to Savannah, GA**  
**(02/07/2017 HY)**

**1.0. TIDES AND WATER LEVELS**

**1.1. Specifications**

Tidal data acquisition, data processing, tidal datum computation and final tidal zoning shall be performed utilizing sound engineering and oceanographic practices as specified in National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD), dated March 2016, and OCS Field Procedures Manual (FPM), dated April, 2014. Specifically reference Chapter 4 of the HSSD and Sections 1.5.8, 1.5.9, 2.4.3, and 3.4.2 of the FPM.

**1.2. Vertical Datums**

The tidal datums for this project are referenced to Chart Datum, Mean Lower Low Water (MLLW) and Mean High Water (MHW). Soundings are referenced to MLLW and heights of overhead obstructions (bridges and cables) are referenced to MHW.

**1.2.1. Water Level Data Acquisition Monitoring**

The Commanding Officer (or Team Leader) and the Center for Operational Oceanographic Products and Services (CO-OPS) are jointly responsible for ensuring that valid water level data are collected during periods of hydrography. The Commanding Officer (or Team Leader) is required to monitor the pertinent water level data via the CO-OPS Web site at <http://tidesandcurrents.noaa.gov/hydro.shtml>, or through regular communications with CO-OPS/Oceanographic Division (OD) personnel before and during operations. During traditional non-duty hours, the Commanding Officer/Team Leader may contact the Continuous Operational Real-Time Monitoring System (CORMS) watch stander who is available 24 hours/day - 7 days/week for assistance in assessing the status of applicable water level station operation. The CORMS watch stander may be contacted either by phone at 301-713-2540 or by email: [CORMS@noaa.gov](mailto:CORMS@noaa.gov). Problems or concerns regarding the acquisition of valid water level data identified by the Commanding Officer/Team Leader shall be communicated with CO-OPS/OD ([nos.coops.hpt@noaa.gov](mailto:nos.coops.hpt@noaa.gov)) to coordinate the appropriate course of action to be taken such as gauge repair and/or developing contingency plans for hydrographic survey operations. In addition, CO-OPS is required to coordinate with the Commanding Officer (or Team Leader) before interrupting the acquisition of water level data for the NWLON stations mentioned above for any reason during periods of hydrography.

**1.2.2. The Hydro Hot List (HHL)**

Please contact the CO-OPS/Hydrographic Planning Team (HPT) at [nos.coops.hpt@noaa.gov](mailto:nos.coops.hpt@noaa.gov) and the Operational Engineering Team (OET) at [nos.coops.oetteam@noaa.gov](mailto:nos.coops.oetteam@noaa.gov) at least three business days before survey operations begin, and within 1 business day after survey operations are completed so that the appropriate CO-OPS National Water Level Observation Network (NWLON) control water level station is added to, or removed from, the CO-OPS Hydro Hotlist (HHL) (<http://tidesandcurrents.noaa.gov/hydro>). Include start and end survey dates, full project number (e.g. OPR-H355-TJ-10), and control station numbers. The notification must be sent to both teams as OET is responsible for configuring the stations in the CO-OPS data base and HPT manages the addition and removal of stations from the HHL.



Station	Station ID	Residual Control	Type (NWLON, PORTS <sup>®</sup> , etc.)	Comment
Fort Pulaski, GA	8670870	Control	NWLON	

Table 1: All stations that need to be added to the HHL in support of OPR-G329-TJ-2017

It is important to know that the addition of a water level station to the HHL ensures the station is monitored by CORMS and any problems are reported daily. However, platforms should view the HHL each morning of active survey operations and click on the “Plot” to double check that there are no problems with the required stations on that day. If a platform notices problems with data on their survey day of operation, please contact HPT at [nos.coops.hpt@noaa.gov](mailto:nos.coops.hpt@noaa.gov), CORMS at [CORMS@noaa.gov](mailto:CORMS@noaa.gov), and their respective headquarters point of contact at HSD or NSD. Stations on the HHL are given priority for maintenance should a station cease normal operation during scheduled times of hydrography. CO-OPS will notify a field unit within 1 business day if a HHL water level station ceases operation during scheduled times of hydrography. This is in addition to the daily CORMS report that CORMS sends to NOAA field units, if the field unit's e-mail address is added to the CORM's daily e-mail list. To be added to the CORMS daily HHL report, the platform should contact CO-OPS’ Data Monitoring and Analysis Team (DMAT) at [nos.co-ops.dmat@noaa.gov](mailto:nos.co-ops.dmat@noaa.gov) and request to be added.

If the stations are listed on HHL, then weekly priority processing will occur and, for those water level stations, verified 6-minute water level data will be made available every week on Monday or Tuesday. If Monday happens to be a federal holiday, then the 6-minute verified water level data will be made available on the following Tuesday or Wednesday. In order to ensure that verified data is correctly downloaded please **select a date that is more than 7 days prior to the day of interest** in the 'From' field on the CO-OPS website.

### 1.3. Operating Tide Reducer Stations

#### 1.3.1. CO-OPS Long Term Water Level Station Operation and Maintenance

The operating water level station Fort Pulaski, GA (8670870), will provide water level reducers for this project. Therefore it is critical that it remains in operation during the survey. See Sections 1.1. and 1.2. concerning responsibilities.

No leveling is required at Fort Pulaski, GA (8670870) by NOAA’s Thomas Jefferson personnel.

CO-OPS/FOD is responsible for the operation and maintenance of all NWLON primary control stations. If a problem is identified at an NWLON primary control station, FOD shall make all reasonable efforts to repair the malfunctioning station. However, CO-OPS may request assistance from the NOAA ship or NRT personnel in the actual repair of the water level station to facilitate a rapid repair. CO-OPS/FOD and the Commanding Officer (or Team Leader) shall maintain the required communications until the repairs to the water level station have been completed.

#### 1.3.2. Subordinate Station Requirements

No subordinate water level stations are required for this project, however, supplemental and/or back-up water level stations may be necessary depending on the complexity of the hydrodynamics and/or the severity of the environmental conditions of the project area. The installation and continuous operation of water level measurement systems (tide gauges) at subordinate station locations is left to the discretion of the Commanding Officer (or Team Leader), subject to the approval of CO-OPS. If the Commanding Officer (or Team Leader) decides to install additional water level stations, then a 30-day minimum of continuous data acquisition is required. For all subordinate stations, data must be collected throughout the

entire survey period for which they are applicable, and not less than 30 continuous days. This is necessary to facilitate the computation of an accurate datum reference as per NOS standards.

### 1.3.3. Tide Component Error Estimation

The estimated tidal error contribution to the total survey error budget in the vicinity of the Approaches to Savannah is 0.20 meters at the 95% confidence level, and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

### 1.3.4. GOES Satellite Enabled Subordinate Stations

This section is not applicable for this project.

### 1.3.5. Benchmark Recovery and GPS Requirements

This section is not applicable for this project.

1.3.6. This section is not applicable for this project.

## 1.4. Discrete Tidal Zoning

1.4.1. The water level station at Fort Pulaski, GA (8670870) is the reference station for preliminary tides for hydrography in the Approaches to Savannah. The time and height correctors listed below for applicable zones should be applied to the preliminary data at Fort Pulaski, GA (8670870) during the acquisition and preliminary processing phases of this project. **Preliminary data may be retrieved in one month increments over the Internet from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>.** The Commanding Officer (or Team Leader) must notify CO-OPS/ED personnel immediately of any problems concerning the preliminary tides. Preliminary data are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. For the time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the preliminary tides at the reference station. A positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights **relative to MLLW** at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

<u>Zone</u>	<u>Time Corrector (min)</u>	<u>Range Ratio</u>	<u>Predicted Reference Station</u>
SA169	-24	x0.85	8670870
SA170	-24	x0.82	8670870
SA172A	-18	x0.88	8670870
SA172B	-12	x0.91	8670870
SA172C	-12	x0.94	8670870
SA172D	-6	x0.97	8670870
SA190	-12	x0.85	8670870

1.4.2. Polygon nodes and water level corrections referencing Fort Pulaski, GA (8670870) are provided in CARIS® format denoted by a \*.zdf extension file name.

**NOTE: The tide corrector values referenced to Fort Pulaski, GA (8670870) are provided in the zoning file “G329TJ2017CORP” for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a representation of West longitude.**

“Preliminary” data for the control water level station, Fort Pulaski, GA (8670870), are available in near real-time and verified data will be available on a weekly basis for the previous week. **These water level data may be obtained from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html>.**

### **1.4.3 Zoning Diagram(s)**

Zoning diagrams are provided in digital format to assist with the zoning in section 1.4.1.

### **1.4.4 Final Zoning**

Upon completion of project OPR-G329-TJ-2017, submit a Pydro generated request for final tides, with times of hydrography abstract and mid/mif tracklines attached. Forward this request to [Final.Tides@noaa.gov](mailto:Final.Tides@noaa.gov) . Provide the project number, as well as a sheet number, in the subject line of the email.

CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. After review, CO-OPS will send a notice indicating that the tidal zoning scheme sent with the project instructions has been approved for final zoning. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised tidal zoning scheme to the field group and project manager for final processing.

### **1.5 Fetchtides**

Preliminary and verified six minute water level time series data may be retrieved from the CO-OPS database via the Fetchtides application. Fetchtides provides a mechanism to store imported data locally and combines multiple days of data into one CARIS readable tide (.tid) file. Fetchtides is available for download at Hydrosoft Online (<https://inside.nos.noaa.gov/hydrosoft/hydrosoftware.html>). For more information, please see the Fetchtides User Manual in the FPM chapter 3 appendix.

### **1.6 Water Level Records**

This section is not applicable for this project.