

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT NC1701-CM-T

Shelly Island, North Carolina

Introduction

Coastal Mapping Program (CMP) Project NC1701-CM-T provides accurate digital shoreline data for Shelly Island, adjacent to Cape Hatteras, North Carolina. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for a variety of coastal zone management applications.

Project Design

Project NC1701-CM-T was designed in response to publicity surrounding the formation of a conspicuous new island near one of America's favorite vacation destinations. Based on analysis of project requirements and results of a source data search, it was determined that CMP procedures for multiple source projects would apply for this project. Available source data deemed adequate for this project included one orthorectified natural color WorldView-2 satellite image from DigitalGlobe, Inc.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project source data.

Georeferencing

The satellite image was assessed for positional accuracy using feature data from a previously completed CMP project, NC1408-TB-C (GC11173) and compared very well spatially. Furthermore the image vendor provided an acceptable accuracy assessment. Therefore the imagery was determined to be suitable for feature compilation without need for additional image georeferencing. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation was accomplished by personnel of the Remote Sensing Division (RSD), Applications Branch (AB) in August 2017. Digital feature data was compiled in shapefile format from the WorldView imagery using Esri's ArcGIS® (v10.4.1) desktop GIS software. Feature attribution was assigned in compliance with the Coastal Cartographic Object Attribute Source Table (C-COAST), which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP.

Spatial data accuracies for NC1701-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. The standard vendor-reported RMSE was used to calculate a horizontal accuracy of 6.8 meters at the 95% confidence level in order to predict

the accuracy of well-defined points measured during feature compilation. The table below provides detailed information on the imagery used for feature compilation:

Image Source	Source File ID (Tile)	Acquisition Date/Time	Tide Level*
WorldView-2	20170720_1544_WV2_ORI_MOS.jp2	2017-07-20 / 15:44:53 GMT	0.1 m

* Tide level is given in meters above MLLW and is based on predicted water levels at the NOS tide gauge at USCG Station Hatteras, NC. The elevation of the MHW tidal datum is approximately 0.155 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted upon project completion by senior CMP personnel in August 2017. The review included an assessment of the identification and attribution of digital feature data within the GC according to image analysis and criteria defined in C-COAST. The quality control process concluded with an inspection of topological connectivity within the GC using ArcGIS (ver. 10.4.1). A Chart Evaluation File (CEF) resulted from comparison of the project imagery with the largest scale NOAA nautical chart covering the project:

- 11555, Cape Hatteras, Wimble Shoals to Ocracoke, NC, 1:80,000 scale, 42nd Ed., Apr. 2015

End Products and Deliverables

The following specifies the location and identification of end products generated during the completion of this project:

Remote Sensing Division Electronic Data Library

- Project database
- Project Completion Report (PCR)
- GC11349 in shapefile format
- CEF in shapefile format

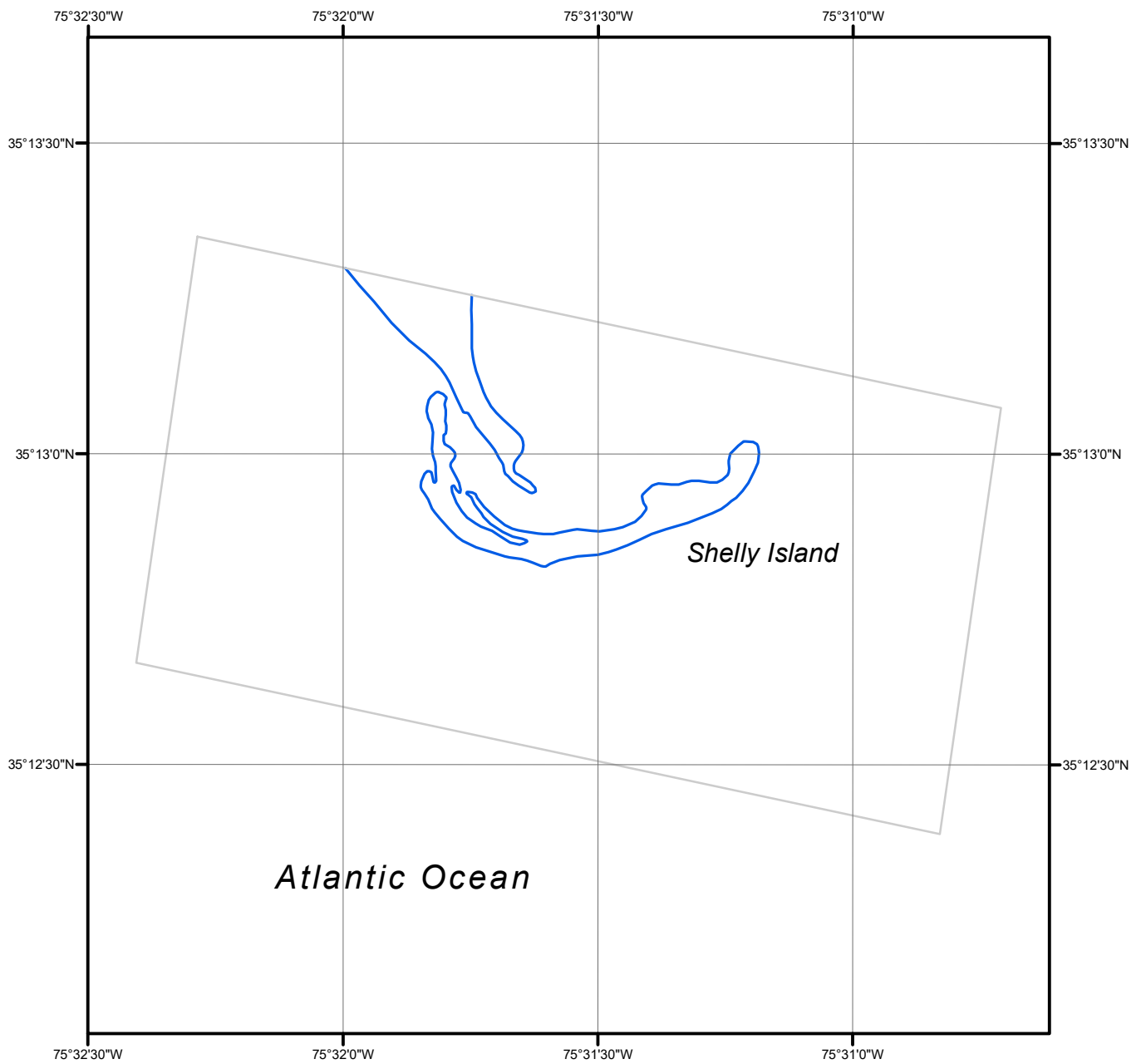
NOAA Shoreline Data Explorer

- GC11349 in shapefile format
- Metadata file for GC11349
- Digital copy of the PCR in Adobe PDF format

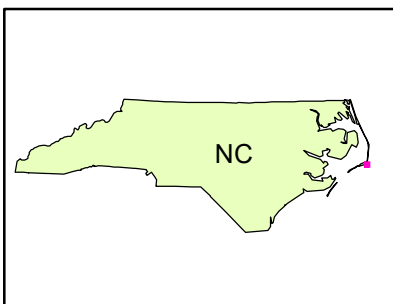
End of Report

SHELLY ISLAND

NORTH CAROLINA



Overview



NC1701-CM-T

GC11349