NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT NY1404

Snipe Island to South Line Island, New York

Introduction

Coastal Mapping Program (CMP) Project NY1404 provides accurate digital shoreline data for portions of several small islands and waterways immediately north of Jones Beach Island, Long Island, New York. 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 NY1404 was designed in response to a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA for new shoreline data in response to reported discrepancies in the vicinity of Snipe and South Line Islands. 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 successful completion of this project included two orthorectified WorldView satellite images from DigitalGlobe, Inc., a pan-sharpened color image acquired March 21, 2014 and a panchromatic image acquired July 5, 2014.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project imagery, which was obtained from external sources.

Georeferencing

Rigorous refinement of the georeferencing of the WorldView imagery was not necessary since the imagery used for compilation compared favorably spatially with the data sources used to verify its geolocation. The published locations of U.S. Coast Guard maintained navigational aids were compared with their positions as measured within the panchromatic satellite image, resulting in a calculated accuracy of 4.1 meters at the 95% confidence level. Four NGS geodetic control points extracted from the NGS control point database were used to further validate this accuracy, with all four points being measured in the satellite image to within 2.0 meters of their published locations.

The positional accuracy of the color image was determined to be significantly worse, and since the panchromatic image provided complete coverage of the project area alone, it was decided that the color image would not be used for direct feature extraction, but only as an aid in feature interpretation. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation was initiated by RSD personnel in July 2014. Digital feature data was compiled in shapefile format from the panchromatic WorldView image using ESRI ArcGIS 9.3.1 desktop GIS software. Feature identification and attribution within the GC were based on image analysis of both WorldView images, as well as on information extracted from the largest scale NOAA nautical chart and other ancillary sources. 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 NY1404 were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were tested to have a horizontal accuracy of 4.1 meters at the 95% confidence level. The following table provides further detail on the imagery used to complete this project:

Sensor	Resolution	Derivative Image ID	Acquisition Date/Time	Tide Level*
WorldView-2	0.5 m	20140321_154936_WV02_ORI.tif	2014-03-21 / 15:49:36 GMT	0.5 m
WorldView-1	0.5 m	20140705_153318_WV01_ORI.tif	2014-07-05 / 15:33:18 GMT	0.2 m

* Tide levels are given in meters above MLLW and are based on actual observations recorded by the NOS reference gage at Sandy Hook, NJ with offsets applied to a substation within the project area. The height of the MHW tidal datum in the project area is 1.0 meter above MLLW.

Quality Control / Final Review

Quality control tasks were conducted upon project completion by senior CMP personnel in July 2014. The review process 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 9.3.1. The entire suite of project products was evaluated for compliance to CMP requirements.

Comparison of the largest scale NOAA nautical chart with the project imagery and compiled feature data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used for comparison:

- 12352, Shinnecock Bay to East Rockaway Inlet, 1:20,000 Scale, 34th Ed. Sep./12

End Products and Deliverables

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

RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Hardcopies of image accuracy and tide level assessments
- Page size graphic plot of GC11094 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC11094 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

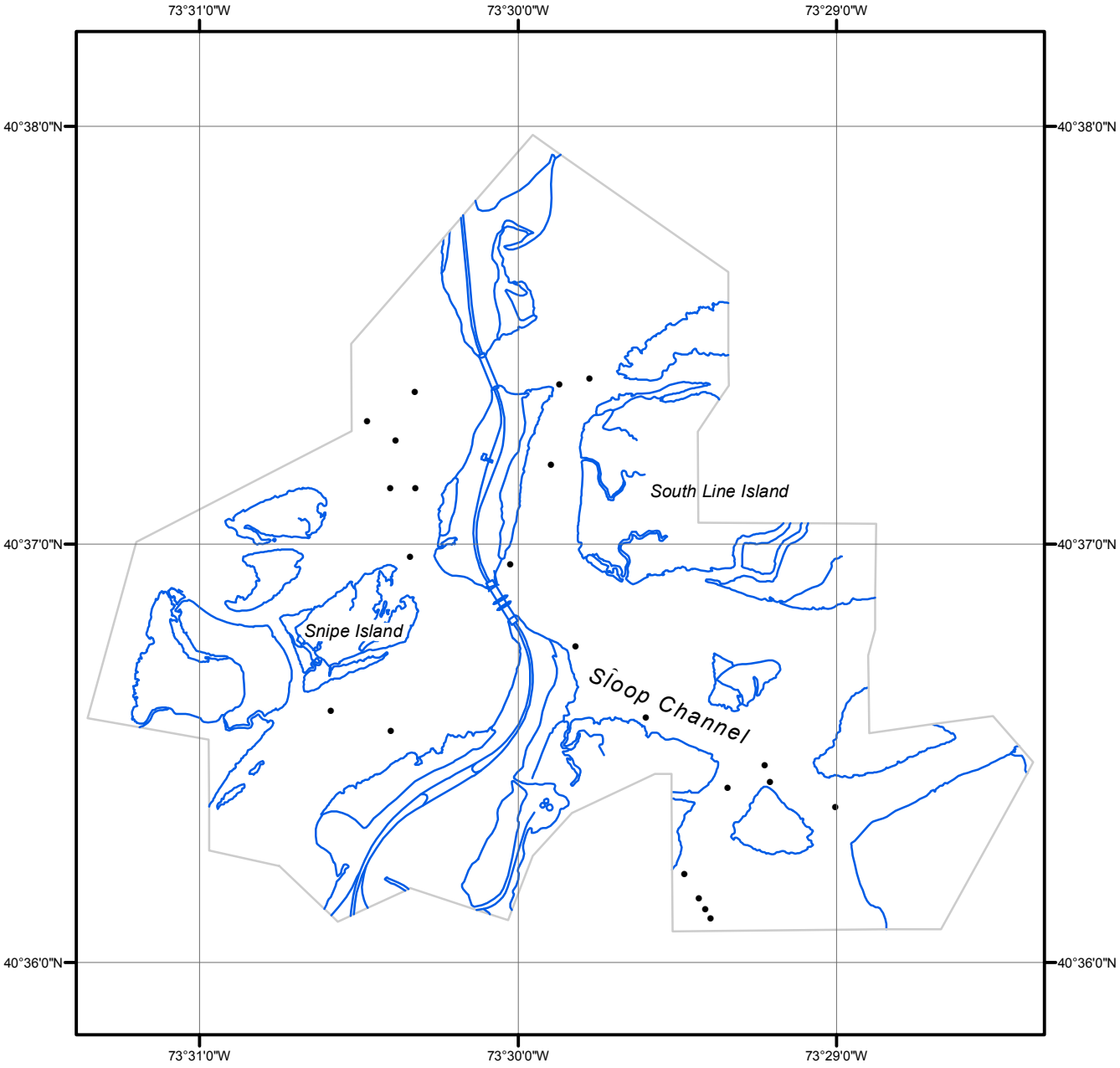
NOAA Shoreline Data Explorer

- GC11094 in shapefile format
- Metadata file for GC11094
- Digital copy of the PCR in Adobe PDF format

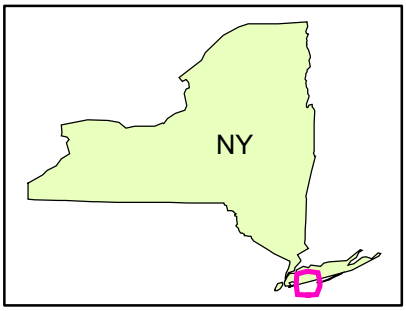
End of Report

SNIPE ISLAND TO SOUTH LINE ISLAND

NEW YORK



Overview



NY1404

GC11094