

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1105A

Marmot and Afognak Islands, Izhut Bay to Perenosa Bay, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1105A provides digital shoreline data from the eastern portion of Perenosa Bay, from just east of the tip of Delphin Point, south and eastwards over Afognak Island, to include Paul's Bay, Phoenix Bay, Seal Bay, and Tonki Bay, and the whole of Marmot Strait and Marmot Island. Southwards, the project extends to include Izhut Bay, to the point of Peril Cape. The Geographic Cell (GC) may be used to complement the Nautical Charting Program (NCP) as well as geographic information systems (GIS) for a variety of coastal zone management applications.

Project Design

Project AK1105A was designed per a request from the Hydrographic Surveys Division (HSD) of the Office of Coast Survey, NOAA, for cartographic data in support of HSD field operations. Based on an analysis of project requirements, and as a result 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 sources acquired in July of 2011. Other image sources from earlier dates were used in the aerotriangulation adjustment, but proved to be unnecessary, and thus was not used in the feature compilation phase of the project.

Field Operations

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

Aerotriangulation

The aerotriangulation task was initiated by RSD personnel in January 2013 utilizing a Digital Photogrammetric Workstation (DPW), which is a configuration of computer hardware, modular software components and other associated peripheral devices. The image files were imported into SOCET SET (version 5.6) using the DataThruWay (ver. 5.5) software extension. The import process converted the stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. Aerotriangulation procedures were completed on a Digital Photogrammetric Workstation using the Multi-Sensor Triangulation (MST) module within SOCET SET. The Interactive Point Measurement tool within MST was used to collect several tie points and a simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well-defined points in this project area of 7 meters at the 95% confidence level. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

The data compilation phase of this project was initiated by RSD in January 2013. The digital mapping was performed using a DPW in conjunction with the SOCET SET Feature Extraction software module. 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. Selected features were further modified with additional descriptive information to refine general classification.

Cartographic features were compiled to meet a horizontal accuracy of 10 meters at the 95% confidence level. Tidal information was obtained from the NOS reference station at Kodiak, AK, and time and height offsets were applied to tidal substations in the project area. The elevation of the MHW datum is 2.4 meters above the MLLW datum. The water level at the times the source images were acquired varied between 2.4 and 3.1 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of the Applications Branch of RSD. The final QC review was completed in April 2013. The review process included analysis of aerotriangulation results and 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 software. All project data was evaluated for compliance to CMP requirements.

Comparisons of the largest scale NOAA nautical charts with source imagery and compiled project data resulted in creation of the Chart Evaluation File (CEF). The following nautical charts were used in the comparison process:

16604, Shuyak and Afognak Islands and Adjacent Waters, 1:78,000 scale, 11th Ed.

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)
- Page size graphic plot of GC10961 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10961 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

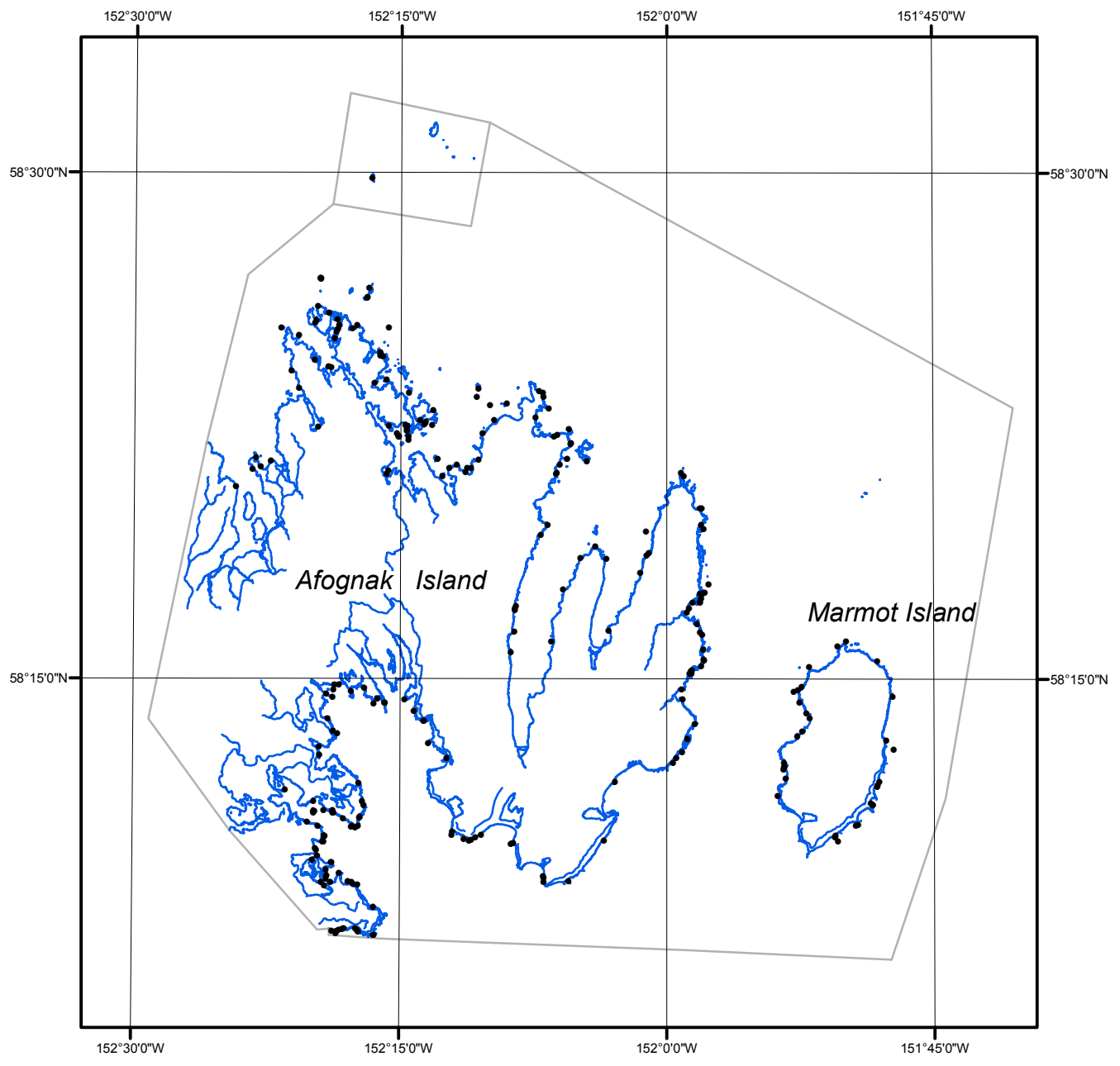
NOAA Shoreline Data Explorer

- GC10961 in shapefile format
- Metadata file for GC10961
- Digital copy of the PCR in Adobe PDF format

End of Report

MARMOT & AFOGNAK ISLANDS, IZHUT BAY TO PERENOSA BAY

ALASKA



Overview



AK1105A

GC10961