

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK0607

Eastern Krenitzin Islands and Southern Unimak Island, Aleutian Islands, Alaska

Introduction

Coastal Mapping Program (CMP) Project AK0607 provides coastal zone mapping data of the eastern Krenitzin Islands and southern Unimak Island from Cape Aksit to Cave Point, in the Aleutian Islands, Alaska. This data includes the islands of Rootok, Avatanak, Tigalda, Ugamak, and Aiktak. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) and coastal zone management activities.

Project Design

This project was designed per a request from the NOAA Hydrographic Surveys Division (HSD) of the Office of Coast Survey, NOAA, for cartographic data in support of HSD operations. Based on an 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 sources acquired in January, April, and September of 2000.

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 accomplished by personnel of the Applications Branch (AB) of the Remote Sensing Division (RSD) in June of 2006. The image files were imported into SOCET SET, version 5.2 using the DataThruWay, version 5.2 software. The importing process also converted the stored and compressed files to a recognized native SOCET SET format (NITF 2.0) and included supporting data extension files consisting of previously measured sensor model parameters. Aerotriangulation procedures were completed on a Digital Photogrammetric Workstation using the Multi-Sensor Triangulation (MST) Tool of 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 9 meters for Unimak Island, 15 meters for Rootok, Avatanak and Tigalda Islands and 20 meters for Ugamak and Aiktak Islands at the 95% confidence level. Positional data for this project is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Digital feature data compilation for this project was accomplished by AB personnel from June through October of 2006. The Feature Extraction tool of SOCET SET was used during the digital feature data compilation phase of project completion. 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 12 meters for Unimak Island, 18 meters for Rootok, Avatanak and Tigalda Islands and 23 meters for Ugamak and Aiktak Islands at the 95% confidence level. Tidal information was obtained from the NOS reference tide station at Unalaska, Alaska and time and height offsets were applied to tidal substations in the project area. The mean tide range at these substations varied between 0.7 and 0.9 meters. The water level at the times the source images were acquired varied between 0.5 and 0.7 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of AB. The final QC review was completed in December of 2006. 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 9.1 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:

- 16520, Unimak and Akutan Passes, 1:300,000 scale, 22nd Ed.
- 16531, Krenitzin Islands, 1:80,000 scale, 7th Ed.

End Products and Deliverables

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

RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Page-size graphic plot of GC10613 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10613 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

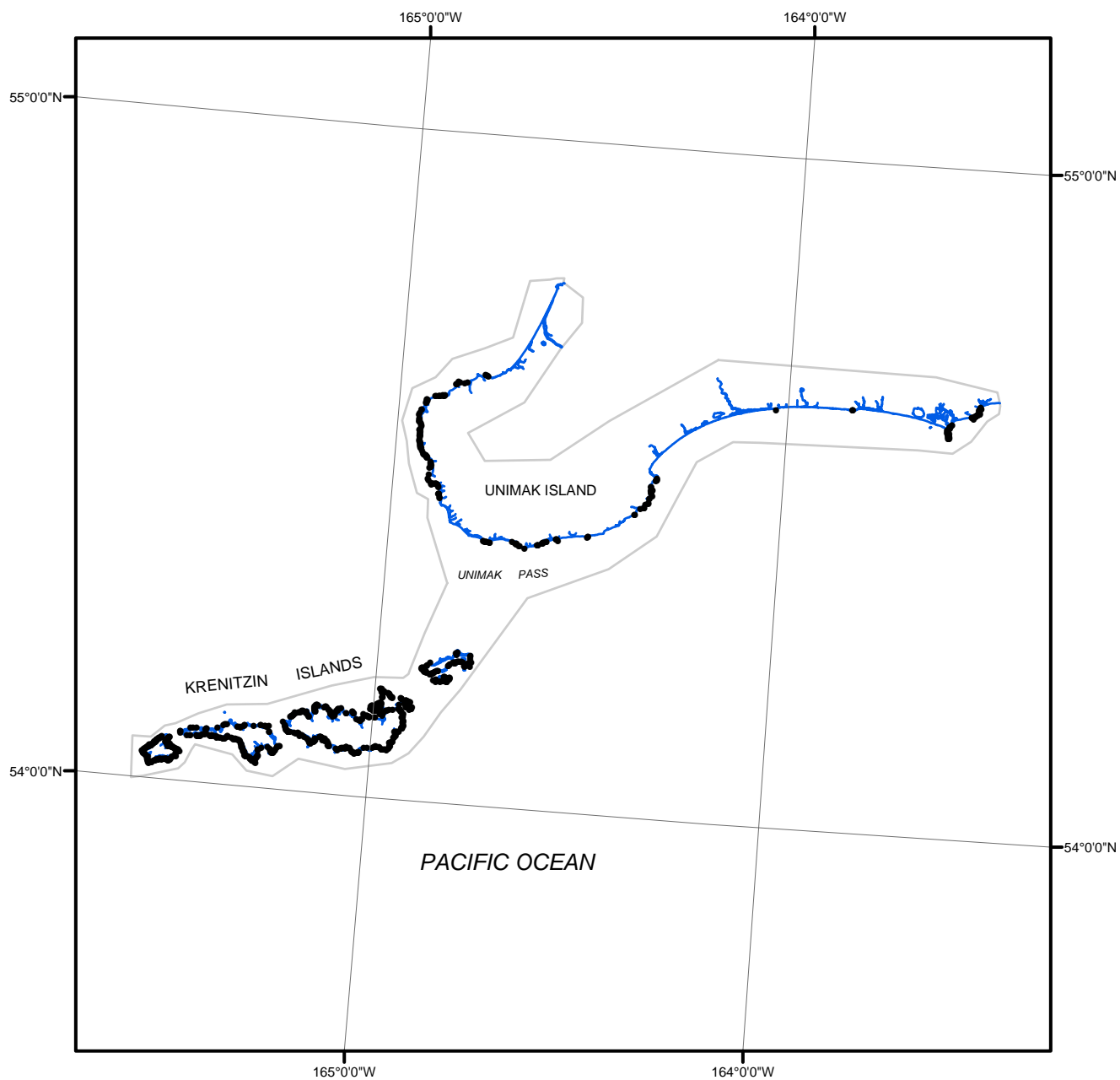
NOAA Shoreline Data Explorer

- GC10613 in shapefile format
- Metadata file for GC10613
- Digital copy of the PCR in Adobe PDF format

End of Report

EASTERN KRENITZIN AND UNIMAK ISLANDS

ALASKA



Overview



AK0607

GC10613