

NOAA COASTAL MAPPING PROGRAM

PROJECT COMPLETION REPORT

PROJECT AK0308

SHUMAGIN ISLANDS, ALASKA

Introduction

Coastal Mapping Program (CMP) Project AK0308 provides coastal zone mapping data of Shumagin Islands, Alaska, from Nagai Island to Unga Island, including Popof Island, Korovin Island, and Andronica Island. The digital cartographic feature file (DCFF) 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) 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 October and November 1999, May 2000, and June 2001.

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 a member of Applications Branch of the Remote Sensing Division (RSD) in February 2004. The image files were imported into SOCET SET (version 5.0), a modular photogrammetric software system on a digital photogrammetric workstation, using the DataThruWay (version 5.0) 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 accomplished using the Multi-Sensor Triangulation (MST) module 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 8 meters at the 95% confidence level.

Compilation

The compilation of cartographic feature data for this project was accomplished by a member of the Applications Branch of RSD in April 2004. Digital feature data was

compiled from imagery within a SOCET SET feature database (FDB) using the Feature Extraction module. Feature attributes were established using the C-COAST specification file, which provides the definition and attribution scheme for the full range of cartographic features pertinent to the CMP. Cartographic features were compiled to meet a horizontal accuracy of 12 meters at the 95% confidence level. Tidal information was obtained from the NOS tide station at Sand Point, Alaska. The difference between MHW and MLLW at Sand Point is 2.0 meters, and source imagery for the entire project area except for the southern tip of Nagai Island occurred when the stage of tide was between 1.3 and 1.7 meters above MLLW. Imagery for the southern end of Nagai Island was obtained when the stage of tide was 2.3 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 May 2004. The review process included analysis of the aerotriangulation results, assessment of the identification and attribution of cartographic features according to image analysis and criteria defined in C-COAST, and inspection of client-specific support products such as the Chart Maintenance Print generated for NCP application. The quality control process concluded with an examination of the DCFF in shapefile format using ESRI's ArcGIS 8.3 desktop GIS software. The entire suite of project products was evaluated for compliance to CMP requirements.

A copy of NOAA nautical chart 16553, Shumagin Islands, Nagai Island to Unga Island, 1:80,000 scale, September 1989, 3rd edition, was used for chart comparison and for the Chart Maintenance Print.

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

- Textual (hard) copy of the Project Completion Report (PCR)
- Page size graphic plot of GC10558 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project Database
- Digital copy of DCFF GC10558 in ESRI shapefile format
- Digital copy of the PCR in Adobe PDF format

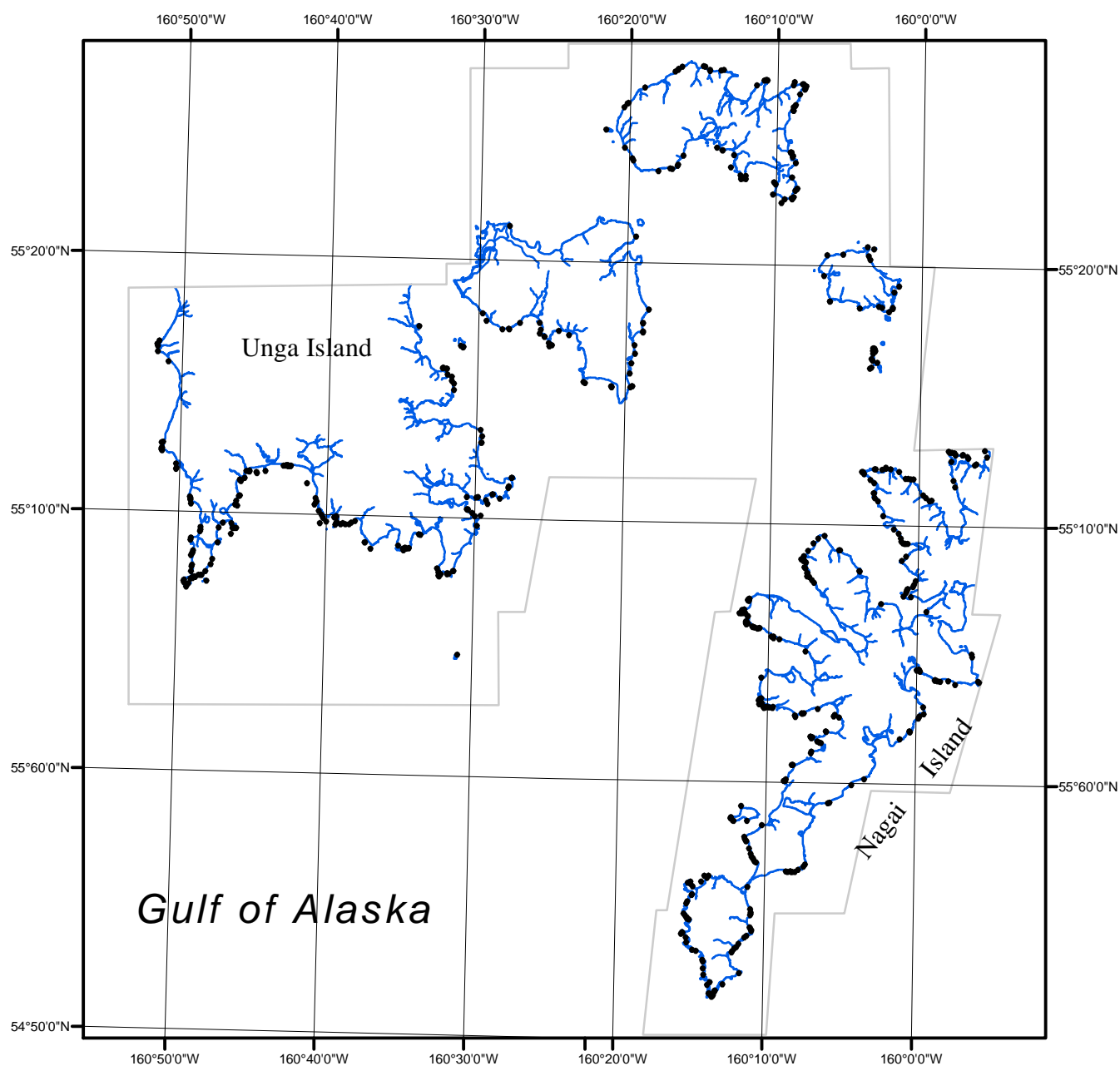
NOAA Shoreline Data Explorer

- DCFF for GC10558
- Metadata file for GC10558
- Digital copy of the PCR in Adobe PDF format

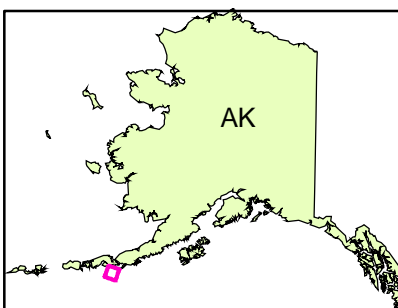
End of Report

SHUMAGIN ISLANDS

ALASKA



Overview



AK0308

GC10558