NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT AK0809

North Glacier Bay, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK0809 provides digital shoreline data for the northern half of Glacier Bay, Alaska, including many branching inlets and the glaciers feeding them. The Geographic Cell (GC10779) 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 AK0809 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 June, 2004.

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 the Applications Branch (AB) of the Remote Sensing Division (RSD) 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 (SS, version 5.4.1) using the DataThruWay (version 5.4) software module. The import process converted 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 SS. The Interactive Point Measurement (IPM) tool within MST was used to collect image points and a simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well defined points of 7 meters at the 95% confidence level. Positional data for this project is referenced to NAD 83.

Compilation

Digital feature data compilation for this project was accomplished by AB personnel using a DPW in conjunction with the SS 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 cartographic features were further modified with additional descriptive information to refine general classification.

Cartographic features were compiled to meet a horizontal accuracy of 10 meters. This reported accuracy is the total of the circular error derived from aerotriangulation statistics, along with an estimate of the additional error caused by the difficulty in interpreting the shoreline in the source imagery.

For portions of the data, approximate MLLW contours were compiled. The tide level for these data, based on verified observations at the Juneau station with offsets applied to sub-stations in the project area, was approximately 0.5 m above MLLW (MHW ≈ 5.0 m).

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by senior CMP personnel of RSD. The review process included an analysis of aerotriangulation results and the assessment of the identification and attribution of cartographic features 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 9.2 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:

Chart 17318 Glacier Bay, 6th Ed., Jan. 08, Scale 1:80,000

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 GC10779 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10779 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

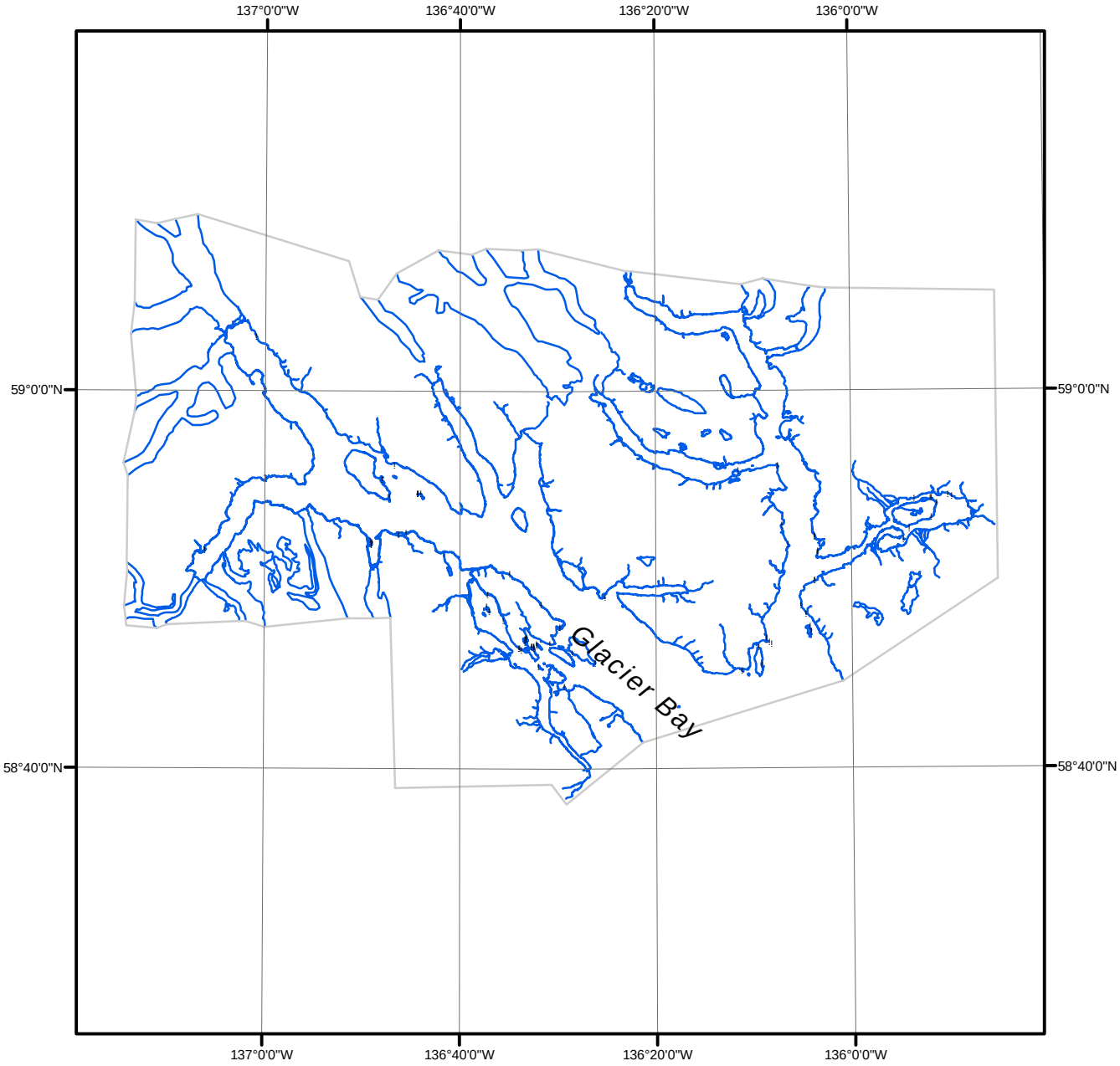
NOAA Shoreline Data Explorer

- GC10779 in shapefile format
- Metadata file for GC10779
- Digital copy of the PCR in Adobe PDF format

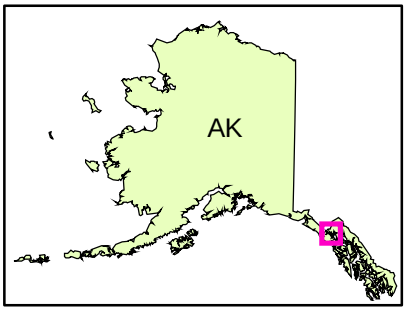
End of Report

NORTH GLACIER BAY

ALASKA



Overview



AK0809

GC10779