

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK0807A

Eastern Kachemak Bay, Alaska

Introduction

Coastal Mapping Program (CMP) Project AK0807A provides coastal zone mapping data of Kachemak Bay in Alaska. This data extends from Point Pogibshi on the southern shore of the bay, heading easterly over Seldovia Bay, Tutka Bay, Sadie Cove, Halibut Cove, Bear Cove and the Bradley River at the back of the bay, and then back to the west to just west of Homer Spit along the northern shore of the bay. 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 March 2001, June 2001, and July 2007.

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 Remote Sensing Division (RSD) Applications Branch (AB) personnel in May 2008 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 5.4.1) using the DataThruWay (version 5.4.1) 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 automatic point measurement (APM) tool within MST was used to collect several tie points, some of which were manually remeasured, 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 AB personnel in June 2008. 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 10.0 meters at the 95% confidence level. Tidal information was obtained from the NOS reference tide station at Seldovia, AK, and time and height offsets were applied to tidal substations in the project area. The mean tide range at these substations varied between 4.3 and 5.3 meters. The water level at the times the source images were acquired varied between -1.0 and +1.2 meters relative to the MLLW tidal datum.

Quality Control / Final Review

RSD AB personnel conducted quality control (QC) tasks during all phases of project completion. The final QC review was completed in June 2008. 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:

16645, Gore Point to Anchor Point, 1:82,622 scale, 18th Ed.

16646, Ports of Southeastern Cook Inlet, VARIOUS scales, 13th 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 GC10700 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10700 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

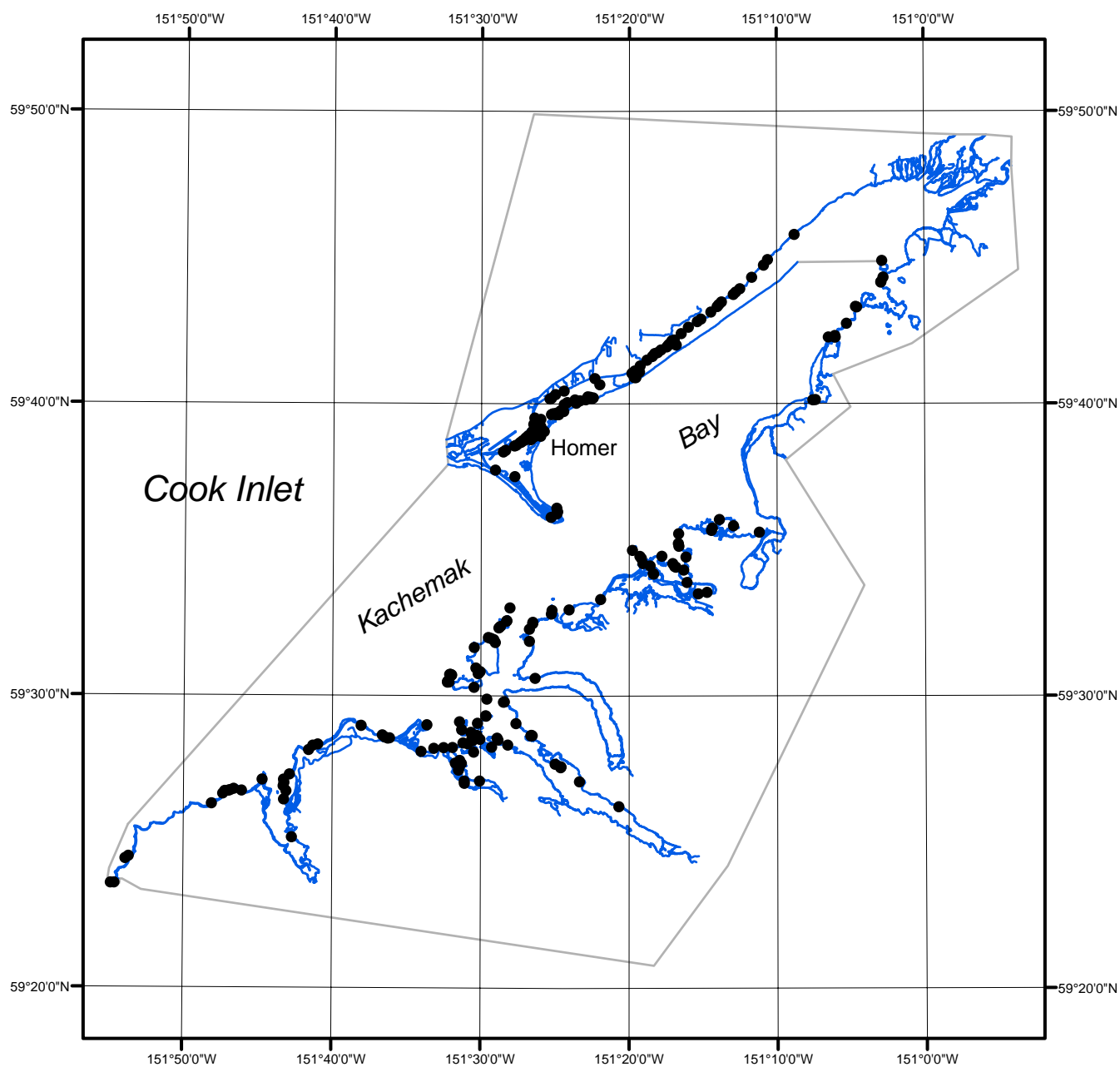
NOAA Shoreline Data Explorer

- GC10700 in shapefile format
- Metadata file for GC10700
- Digital copy of the PCR in Adobe PDF format

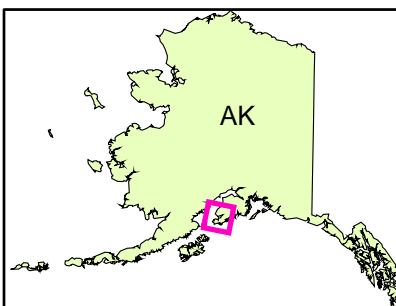
End of Report

EASTERN KACHEMAK BAY

ALASKA



Overview



AK0807A

GC10700