

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1102

Morzhovoi Bay and Isanotski Strait, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1102 provides digital shoreline data for the area surrounding Morzhovoi Bay, Alaska. This project area extends from Otter Cove in the southwest to Thinpoint Cove in the northeast, including Ikatan Bay, False Pass, Bechevin Bay, Morzhovoi Bay, and Umga Island. 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 AK1102 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. The majority of the available source data was deemed adequate for successful completion of this project. However some of the original source data contained clouds and strong sun glare making it necessary to acquire additional imagery to successfully complete this project. Source data was acquired in March & May 2013, July & October 2012, April 2011, April 2010 and June 2006

Field Operations

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

Aerotriangulation

The aerotriangulation (AT) task was initiated by Remote Sensing Division (RSD) personnel in April 2014 using 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 (ver. 5.6) using both the DataThruWay (DTW ver. 5.6) software module. The DTW import process converted stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. AT procedures were accomplished using the Multi-Sensor Triangulation (MST) module of SOCET SET. The Interactive Point Measurement (IPM) tool within MST was used to collect image points. A simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well-defined points of 5 meters 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 RSD Applications Branch (AB) personnel in May 2014, 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 cartographic features were further modified with additional descriptive information to refine general classification.

Cartographic features were compiled to meet a horizontal accuracy of 8 meters at the 95% confidence level. Tidal information was obtained from two separate NOS tide stations. For the Bechevin Bay and Isanotski Strait areas, tide levels were calculated using the Unalaska Station with the tide range (MHW – MLLW) of 1 meter. For the Ikatan Bay, Morzhovoi Bay and all areas east, the tide levels were calculated using the Sand Point, Popof Island station with the tide range (MHW – MLLW) of 2 meters. All of the tide levels within the project area at the time the imagers were acquired were found to be approximately at mid-tide levels, with the exception of the images covering the northern portion of Bechevin Bay and the southern portion of Ikatan Peninsula, which were at or near the MLLW level.

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:

- 1) An analysis of AT results, including the assessment of two independent photo-identifiable check points:
 - A) GPS Continuously Operating Reference Station (CORS) surveyed position retrieved from the NGS Data Sheet (DM7469) measured within 1 meter.
 - B) Also retrieved from the NGS Data Sheet, a Third Order surveyed station (UW0371) UMGA Island Light 1941. The AT results were found to be within 5 meters of the published coordinates.
- 2) Assessment of the identification and attribution of cartographic features within the (GC) according to image analysis and criteria defined in C-COAST.
- 3) Assessment of topological connectivity within the GC using ArcGIS 10.1 software.

All project data was evaluated for compliance to CMP requirements. Comparisons of the largest scale NOAA nautical chart with source imagery and compiled project data resulted in creation of the Chart Evaluation File (CEF). The following nautical chart was used in the comparison process:

Chart 16535, Morzhovoi Bay and Isanotski Strait, Scale 1:80,000, 12th Ed., Nov. 18, 2000

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 GC11068 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC11068 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

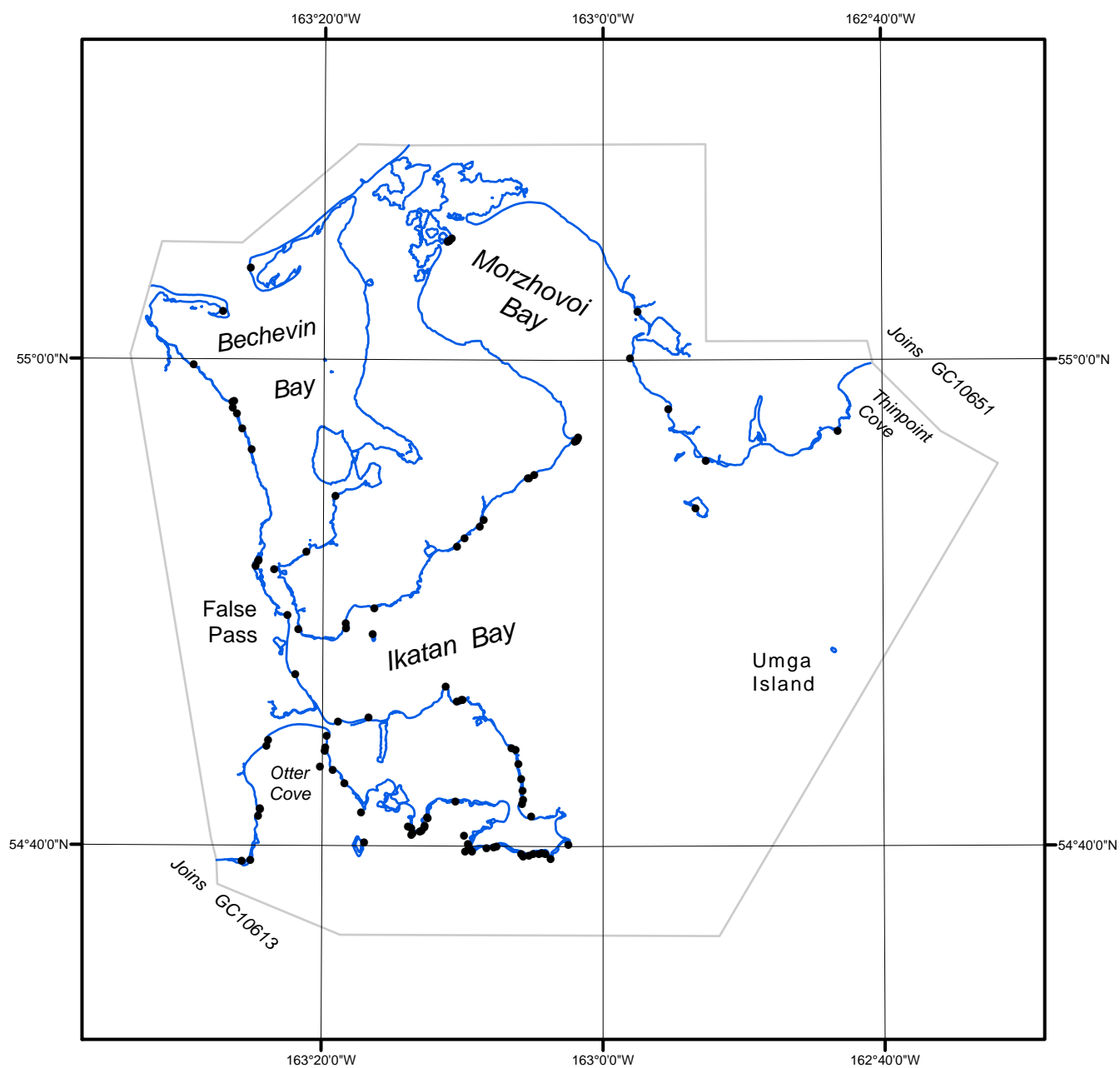
NOAA Shoreline Data Explorer

- GC11068 in shapefile format
- Metadata file for GC11068
- Digital copy of the PCR in Adobe PDF format

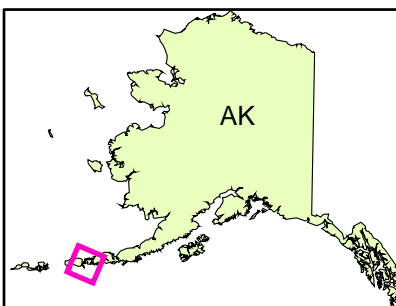
End of Report

MORZHOVOI BAY AND ISANOTSKI STRAIT

ALASKA



Overview



AK1102

GC11068