

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1408A-CM-T

Slocum, Ford and Falcon Arms, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1408A-CM-T provides digital shoreline data for an area encompassing the areas of Slocum Arm, Ford Arm and Falcon Arm, Alaska, located adjacent to Khaz Bay along the southeastern coast of Alaska, at approximately 57.5° N latitude and 135.9° W longitude. 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 AK1408A-CM-T was designed per a request from the Marine Chart Division (MCD) of the Office of Coast Survey, NOAA, for cartographic data support. 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 May 2004 and November 2013.

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 October 2014 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 (ver. 5.6) using the DataThruWay (DTW ver. 5.6) software module. The DTW import process converted stored compressed files to the National Imagery Transmission Format (NITF 2.1) with headers and metadata. AT 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 image points. A simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well-defined points of 3.0 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 February 2015, 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 6.0 meters at the 95% confidence level. Verified water levels were obtained from the NOS tide stations at Sitka, AK (Station ID: 9451600) and Elfin Cove (9452634), with time/height offsets applied to the Falcon Arm, Slocum Arm (TWC1789) tidal substation. The water levels, at the times of source acquisition, varied between 0.8 – 2.0 meters above MLLW. The elevation of the MHW tidal datum in the project area is approximately 2.7 meters above the MLLW datum.

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 to include the assessment of three (3) NGS 3rd Order horizontal confidence points (RMS = 5 m.) along with an assessment of parallax within each stereo-model,
- 2) Assessment of the identification and attribution of cartographic features within the GC according to image analysis and criteria defined in C-COAST, and
- 3) Assessment of topological connectivity within the GC using ArcGIS 10.2 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 17322, Khaz Bay, Scale 1:40,000, 11th Ed., May/14

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 GC11139 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC11139 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

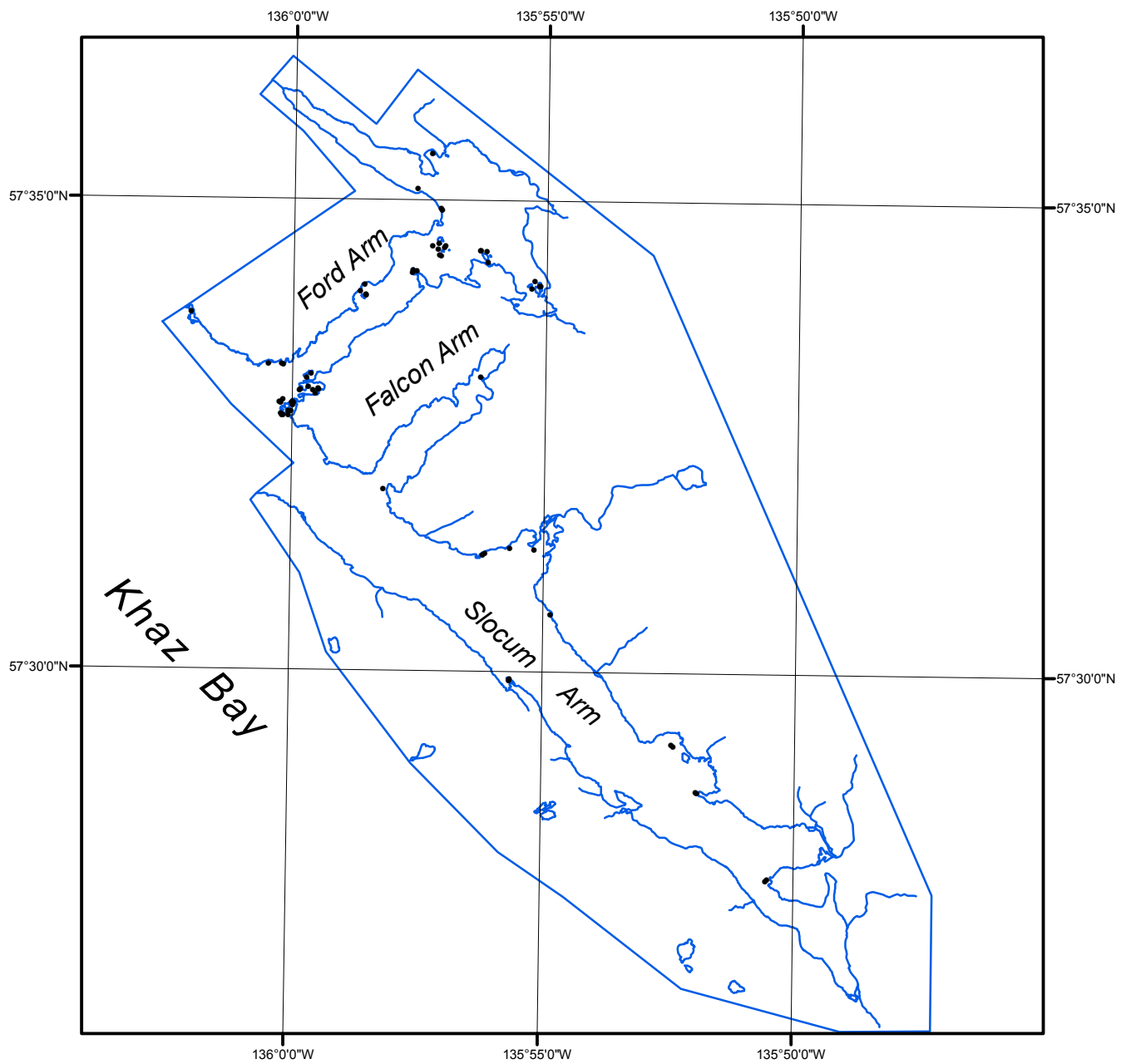
NOAA Shoreline Data Explorer

- GC11139 in shapefile format
- Metadata file for GC11139
- Digital copy of the PCR in Adobe PDF format

End of Report

SLOCUM, FORD AND FALCON ARMS

ALASKA



Overview



AK1408A-CM-T

GC11139