NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT AK1804-CM-T

Endicott Arm at Dawes Glacier, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1804-CM-T provides accurate digital shoreline data for Endicott Arm at Dawes Glacier, Alaska. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) as well as geographic information systems (GIS) for a variety of coastal zone management applications.

Project Design

Project AK1804-CM-T was designed in response to a request from the Navigation Services Division (NSD) of the Office of Coast Survey. Based on 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 completion of this project included two WorldView Standard pan-sharpened natural color satellite images, constituting one stereo pair, and one orthorectified Geoeye-1 pan-sharpened natural color satellite image. All imagery was obtained from DigitalGlobe Inc. through the NextView government contract.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project imagery, which was obtained from external sources.

Aerotriangulation

Softcopy aerotriangulation methods were completed by AB personnel in March of 2018 utilizing a Windows-based stereo-enabled workstation. The WorldView satellite images were measured and adjusted using only tie points and two vertical control points, as one stereo model using BAE Systems' Multi-Sensor Triangulation (MST) module within SOCET SET (ver. 5.6) photogrammetric software. Upon successful completion of the aerotriangulation process, the MST software provided the RMS of the standard deviations of the residuals for each aerotriangulated tie point which was used to compute a predicted horizontal circular error of 15 meters for the model based on a 95% confidence level. An Aerotriangulation Report was written and is on file with other project data within the RSD Electronic Data Library. Although the GeoEye image was used as a source for chart comparison, no features were compiled using this image, and therefore no additional georeferencing steps were performed.

Compilation

Data compilation was accomplished by personnel of the Applications Branch (AB) of the

Remote Sensing Division (RSD) in March 2018. Feature data was compiled using the Feature Extraction module within SOCET SET. 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.

Spatial data accuracies for AK1804-CM-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 18 meters at the 95% confidence level.

The table below provides further details on the imagery used to complete this project:

Image Source	Resolution	Source ID	Acquisition Date/Time	Tide Level*
GeoEye-1	0.5 m	20140803_1958_GE01_ORI_mos.jp2	2014-08-03 / 19:58	1.0 m
WorldView-1	0.5 m	17NOV16201701-M1BS-057510299010_01_P001.TIF	2017-11-16 / 20:17	5.1 m
WorldView-1	0.5 m	17NOV16201755-M1BS-057510299010_01_P001.TIF	2017-11-16 / 20:17	5.1 m

* Tide level is given in meters above MLLW and is based on actual observations recorded at the time of image acquisition by the NOS gauge at Juneau, AK, with time/height offsets applied to the North Shore Upper Endicott Arm substation (Station ID: 9452005). The elevation of MHW at the tidal substation is approximately 4.57 meters above MLLW.

Quality Control / Final Review

Quality control tasks were conducted upon project completion by senior CMP personnel in March 2018. The review process included an 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 Esri's ArcGIS (ver. 10.5) software. The entire suite of project products was evaluated for compliance to CMP requirements. A Chart Evaluation File (CEF) was created by comparing project imagery with the following nautical chart:

- 17360, 37th Ed., June 2015

End Products and Deliverables

The following specifies the location and identification of end products generated during the completion of this project:

Remote Sensing Division Electronic Data Library

- Project database
- Aerotriangulation Report
- GC11401 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

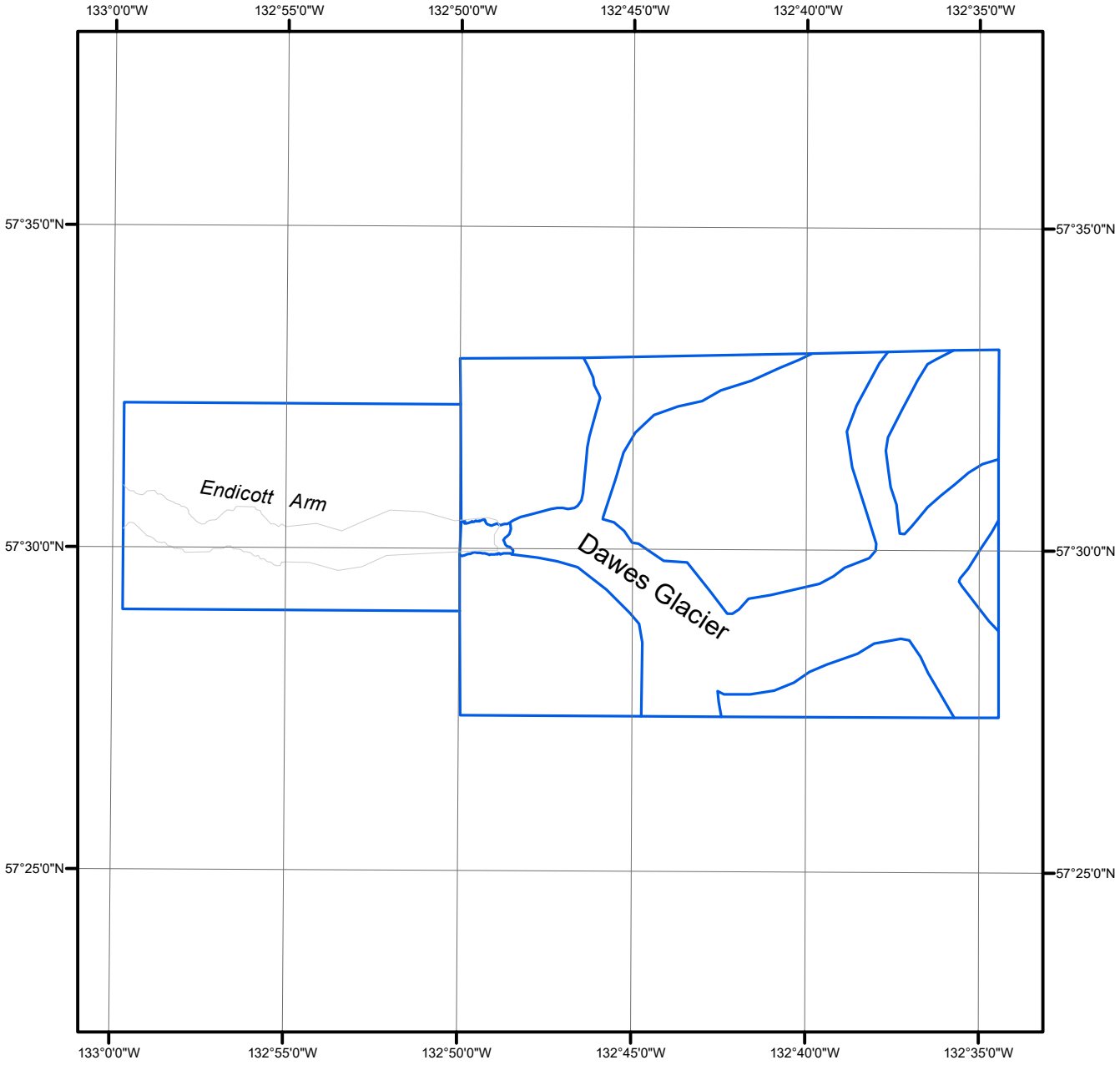
NOAA Shoreline Data Explorer

- GC11401 in shapefile format
- Metadata file for GC11401
- PCR in Adobe (PDF) format

End of Report

ENDICOTT ARM AT DAWES GLACIER

ALASKA



Overview

AK1804-CM-T

GC11401