

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1202A

Walakpa River to Iko Bay, Alaska

Introduction

NOAA Coastal Mapping Program (CMP) Project AK1202A provides digital shoreline data for Point Barrow, Alaska, from the Walakpa River to Iko Bay, including Elson Lagoon and the western Plover Islands. 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 AK1202A was designed to support NOAA Arctic mapping initiatives. 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 July and August of 2012.

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 personnel of the Applications Branch (AB) of the Remote Sensing Division (RSD) in January 2013 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 2.0) 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. The simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well-defined points of 2.5 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 AB personnel in May 2013, 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 5.0 meters at the 95% confidence level. The range of tide in the project area is approximately 0.1 meter.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by senior CMP personnel of AB. The review process included:

- 1) An analysis of AT results to include the assessment of two (2) check points (Barrow Church Cross and Barrow Vortac: mean horizontal offset = 4.1 meter) and 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 10.1 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 charts were used in the comparison process:

Chart 16081, Scott Pt. to Tangent Pt., Scale 1:50,000, 7th Ed., Oct/04
Chart 16082, Pt. Barrow and Vicinity, Scale 1:50,000, 7th Ed., Apr/04
Chart 16083, Skull Cliff and Vicinity, Scale 1:50,000, 6th Ed., Nov/03

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 GC10973 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project database
- GC10973 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

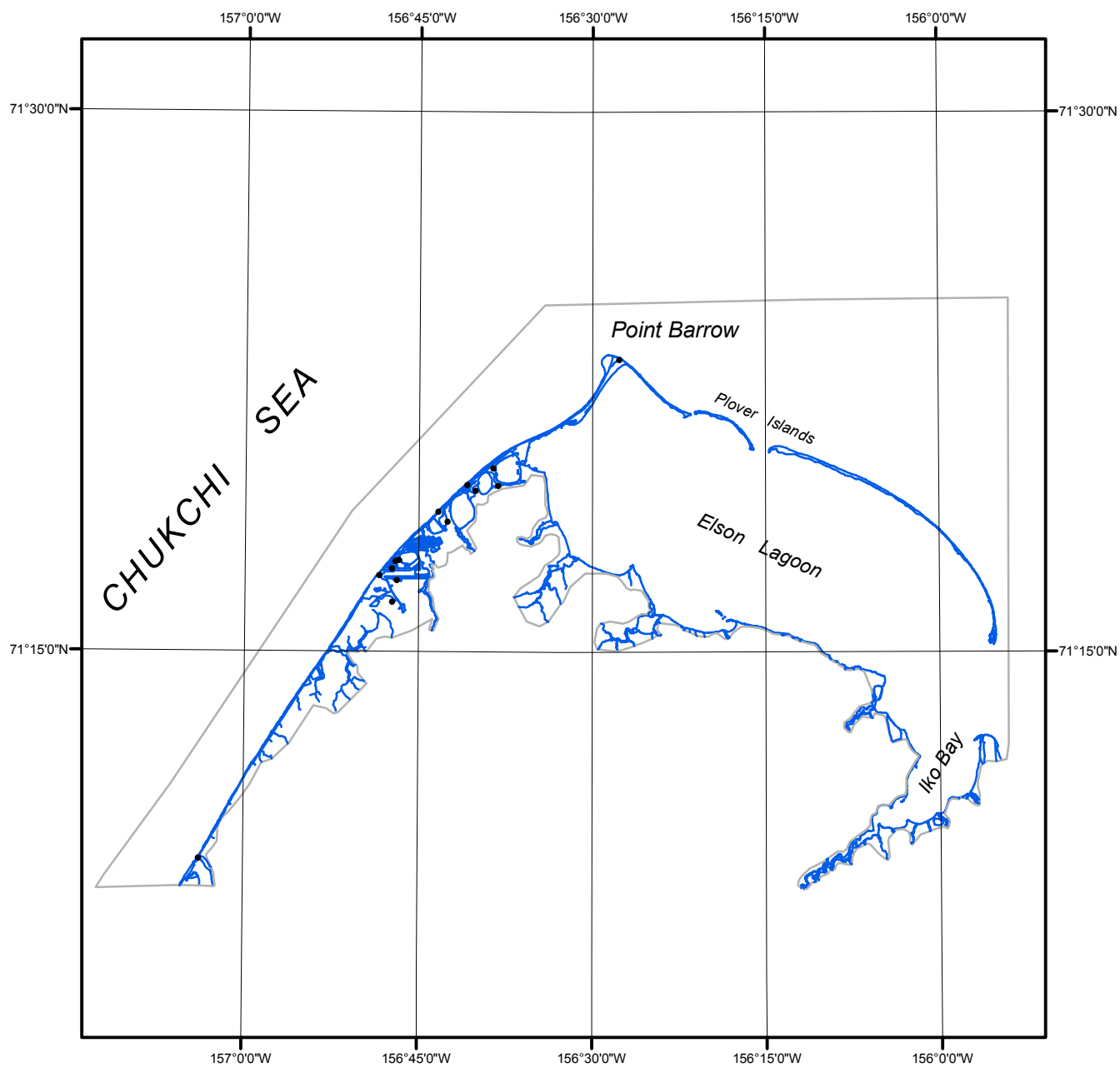
NOAA Shoreline Data Explorer

- GC10973 in shapefile format
- Metadata file for GC10973
- Digital copy of the PCR in Adobe PDF format

End of Report

WALAKPA RIVER TO IKO BAY

ALASKA



Overview



AK1202A

GC10973