

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT AK1902-CS-T

Dutch Harbor, Alaska

Introduction

Coastal Mapping Program (CMP) Project AK1902-CS-T provides highly accurate digital shoreline data for key areas of change within Dutch Harbor, 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

The design of Project AK1902-CS-T was accomplished by the Requirements Branch (RB) of the Remote Sensing Division (RSD) in response to the need for updates to the NOAA chart suite in key ports. Project requirements were formulated as a result of analysis conducted within the Coast and Shoreline Change Analysis Program (CSCAP), in which NOAA nautical chart products are compared to contemporary high resolution imagery to ascertain the need for more current shoreline data. One orthorectified natural color WorldView-2 (WV2) image with a spatial resolution of 0.5 meters was utilized for the CSCAP analysis. An additional panchromatic WV2 image with a resolution of 0.5 meters was subsequently obtained for use in compilation after difficulties were encountered georeferencing the first image. A Chart Evaluation File (CEF) was created once the change analysis was complete. Refer to the CSCAP memorandum for AK1902-CS-T for details regarding the chart comparison process.

Field Operations

Routine CMP field operations did not apply for this project based on the origin of the project source data. Existing sources of horizontal control were used for the georeferencing process.

Georeferencing

Georeferencing tasks were initiated by a member of the Applications Branch (AB) of RSD in June 2019. The panchromatic WV2 image was georeferenced using Esri's ArcGIS (ver. 10.6.1) desktop GIS software. Within ArcGIS the Georeferencing tool was used to spatially adjust the image to align with previously georeferenced WorldView natural color satellite images from Project AK1407-CS-T. The imagery was not resampled. Positional data is referenced to the North American Datum of 1983 (NAD 83).

Compilation

Data compilation was accomplished by a member of AB in June 2019. Digital feature data was compiled from satellite imagery in shapefile format using ArcGIS software. 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 Project AK1902-CS-T were determined according to standard Federal Geographic Data Committee (FGDC) practices. Cartographic features were compiled to meet a horizontal accuracy of 2.7 meters at the 95% confidence level. This accuracy matches the tested horizontal accuracy of the imagery used as control. The following table provides information on the satellite images used in the project completion:

Image Source	Source File ID	Product Description	Acquisition Date/Time	Tide Level*
WorldView-2	20171105_WV02_ORI_MOS.jp2	Pan-sharpened natural color, orthorectified	11-5-2017 / 22:44 GMT	0.6 m
WorldView-2	19FEB13225055-P1BS-502713845050_01_P001.TIL	Panchromatic	2-13-2019 / 22:50 GMT	0.6 m

* Tide levels are given in meters above MLLW and based on verified observations recorded at the NOS gage in Unalaska, AK at the time of image acquisition. MHW is 1.01 meters above MLLW at the tide gage.

Quality Control / Final Review

Quality control tasks were conducted upon project completion by a senior member of RSD. The final QC review was completed in June 2019. The review process included analysis of the georeferencing 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 (ver. 10.6.1). The entire suite of project products was evaluated for compliance to CMP requirements.

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

- CSCAP evaluation memorandum
- GC11536 in shapefile format
- Project Completion Report (PCR)
- CEF in shapefile format

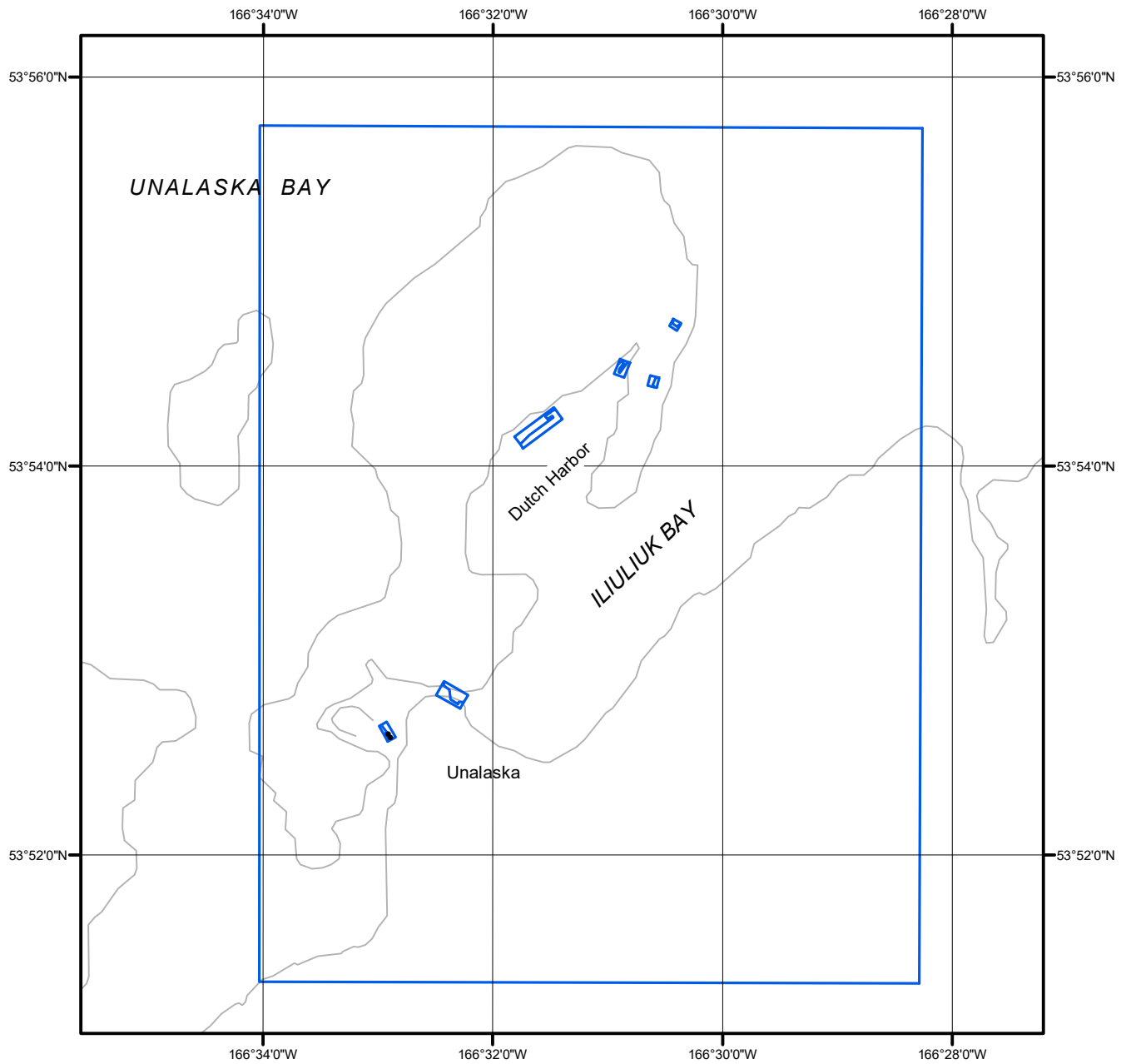
NOAA Shoreline Data Explorer

- GC11536 in shapefile format
- Metadata file for GC11536
- PCR in Adobe PDF format

End of Report

DUTCH HARBOR

ALASKA



Overview



AK1902-CS-T

GC11536