

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT MP0504

Maug Islands, Northern Mariana Islands

Introduction

NOAA Coastal Mapping Program (CMP) Project MP0504 provides digital shoreline data for Maug Islands in the Northern Mariana Islands. The digital cartographic feature data may be used to compliment the Nautical Charting Program (NCP) as well as geographic information systems (GIS) for a variety of coastal zone management applications.

Project Design

Project MP0504 was designed per a request from the Marine Charting Division (MCD) of the Office of Coast Survey, NOAA, for GIS data in support of MCD operations, specifically to aid in shifting the chart data to the North American Datum of 1983 (NAD 83). 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 September of 2004.

Field Operations

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

Aerotriangulation

The aerotriangulation task was initiated by Remote Sensing Division (RSD) personnel in August of 2006 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 (version 5.2) using the DataThruWay (version 5.2) software extension. The import process converted the stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. Aerotriangulation 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 several tie points and a simultaneous solve adjustment was then performed, forecasting an average predicted horizontal circular error for all well defined points in this project area of 14 meters at the 95% confidence level. Positional data for this project is referenced to NAD 83.

Compilation

The data compilation phase of this project was initiated by RSD in August of 2006. The digital mapping was performed 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 17 meters at the 95% confidence level. Tidal information was unavailable for the project area.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of the Applications Branch of RSD. The final QC review was completed in August of 2006. The review process included an analysis of aerotriangulation results and the assessment of the identification and attribution of cartographic features within the DCFF according to image analysis and criteria defined in C-COAST. The quality control process concluded with an inspection of topological connectivity within the DCFF using ArcGIS 9.1 software. All project data was evaluated for compliance to CMP requirements.

Comparisons of the largest scale NOAA nautical charts 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:

81092, Maug Islands, 1:26,420 scale, 3rd ed.

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 GC10621 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

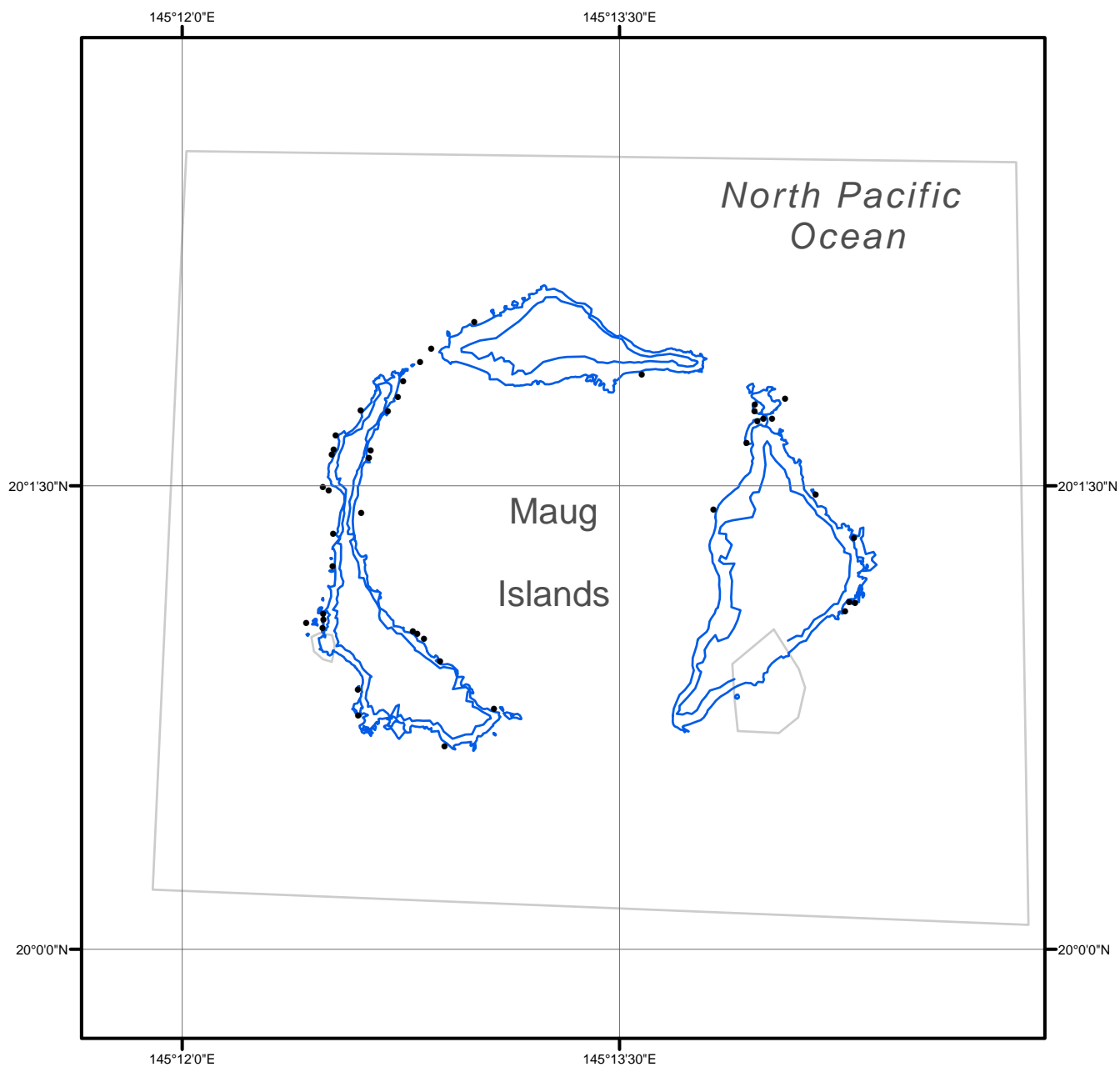
- Project Database
- Digital copy of DCFF GC10621 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

NOAA Shoreline Data Explorer

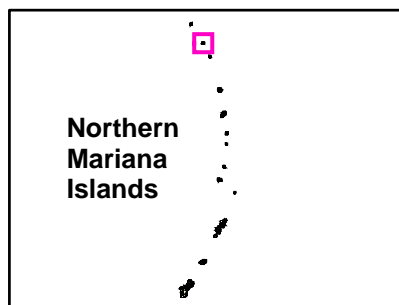
- DCFF for GC10621
- Metadata file for GC10621
- Digital copy of the PCR in Adobe PDF format

End of Report

MAUG ISLANDS NORTHERN MARIANA ISLANDS



Overview



MP0504

GC10621