NOAA COASTAL MAPPING PROGRAM
PROJECT COMPLETION REPORT

PROJECT MP0502

Asuncion Island, Northern Mariana Islands

Introduction

NOAA Coastal Mapping Program (CMP) Project MP0502 provides digital shoreline data for Asuncion Island 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 MP0502 was designed per a request from the Marine Charting Division (MCD) of the Office of Coast Survey, NOAA, for cartographic 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 the 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 successful completion of this project included sources acquired in August of 2000.

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 June 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 7.2 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 July 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 10.2 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 analysis of aerotriangulation results and 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 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:

81086, Asuncion, 1:41,275 scale, 5th 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 GC10619 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

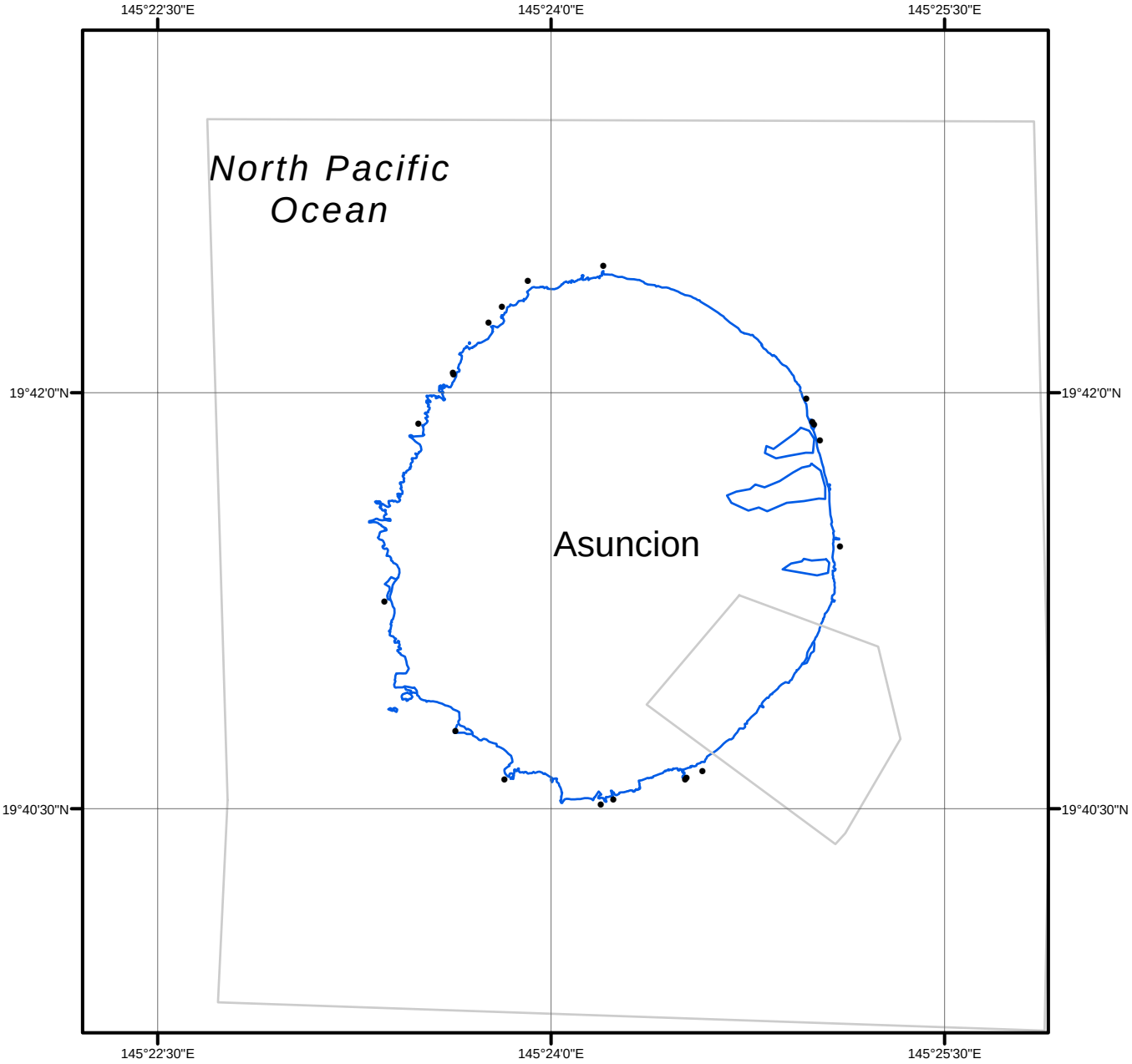
- Project Database
- Digital copy of DCFF GC10619 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- CEF in shapefile format

NOAA Shoreline Data Explorer

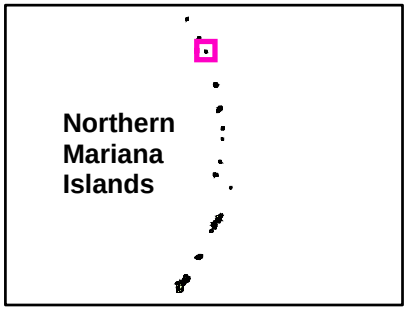
- DCFF for GC10619
- Metadata file for GC10619
- Digital copy of the PCR in Adobe PDF format

End of Report

ASUNCION ISLAND
NORTHERN MARIANA ISLANDS



Overview



MP0502

GC10619