

NOAA COASTAL MAPPING PROGRAM PROJECT COMPLETION REPORT

PROJECT UM0505

Kingman Reef, U.S. Pacific Islands

Introduction

Coastal Mapping Program (CMP) Project UM0505 provides an accurate database of new digital shoreline data for Kingman Reef, located at approximately 6.4° north latitude and 162.4° west longitude. Kingman Reef is a largely submerged uninhabited tropical atoll located in the North Pacific Ocean. It is the northernmost of the Northern Line Islands and lies 32 nautical miles northwest of the next closest island (Palmyra Atoll), and about 920 nautical miles south of Honolulu. Kingman Reef has the status of an unincorporated territory of the United States, administered by the U.S. Navy. The Geographic Cell (GC) may be used in support of the NOAA Nautical Charting Program (NCP) and coastal zone management activities. Project survey data is referenced to the North American Datum of 1983 (NAD 83).

Project Design

This project was designed per a request from the NOAA Office of Coast Survey (OCS), for cartographic data in support of Marine Chart Division (MCD) operations. Based on an 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 successful completion of this project included sources acquired in June 2004 and September 2007.

Field Operations

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

Aerotriangulation

The image files were imported into SOCET SET (version 5.3) using the DataThruWay (version 5.3) software extension. The import process converted the stored compressed files to the National Imagery Transmission Format (NITF 2.0) with headers and metadata. Since Kingman Reef is mostly submerged reef, no successful aerotriangulation was achieved by the Applications Branch (AB), Remote Sensing Division (RSD) personnel.

Compilation

Digital feature data compilation for this project was accomplished by AB personnel in May 2008. 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. The

predicted horizontal accuracy for this project is unknown. However, based on empirical results of previous projects in this region using similar sources and techniques, the cartographic features were compiled to meet a horizontal accuracy of 25 meters or better at the 95% confidence level. The water level at the time of imagery is unknown.

Quality Control / Final Review

Quality control tasks were conducted during all phases of project completion by a senior member of AB. The final QC review was completed in June 2008. The review process included an assessment of the identification and attribution of cartographic features 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 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:

Chart 83153, Kingman Reef, 1:25,000 scale, 1st Ed., Revised May 1986

End Products and Deliverables

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

RSD Applications Branch Archive

- Hardcopy of the Project Completion Report (PCR)
- Page-size graphic plot of GC10611 file contents, attached to PCR

Remote Sensing Division Electronic Data Library

- Project Database
- GC10611 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- Chart Evaluation File in shapefile format

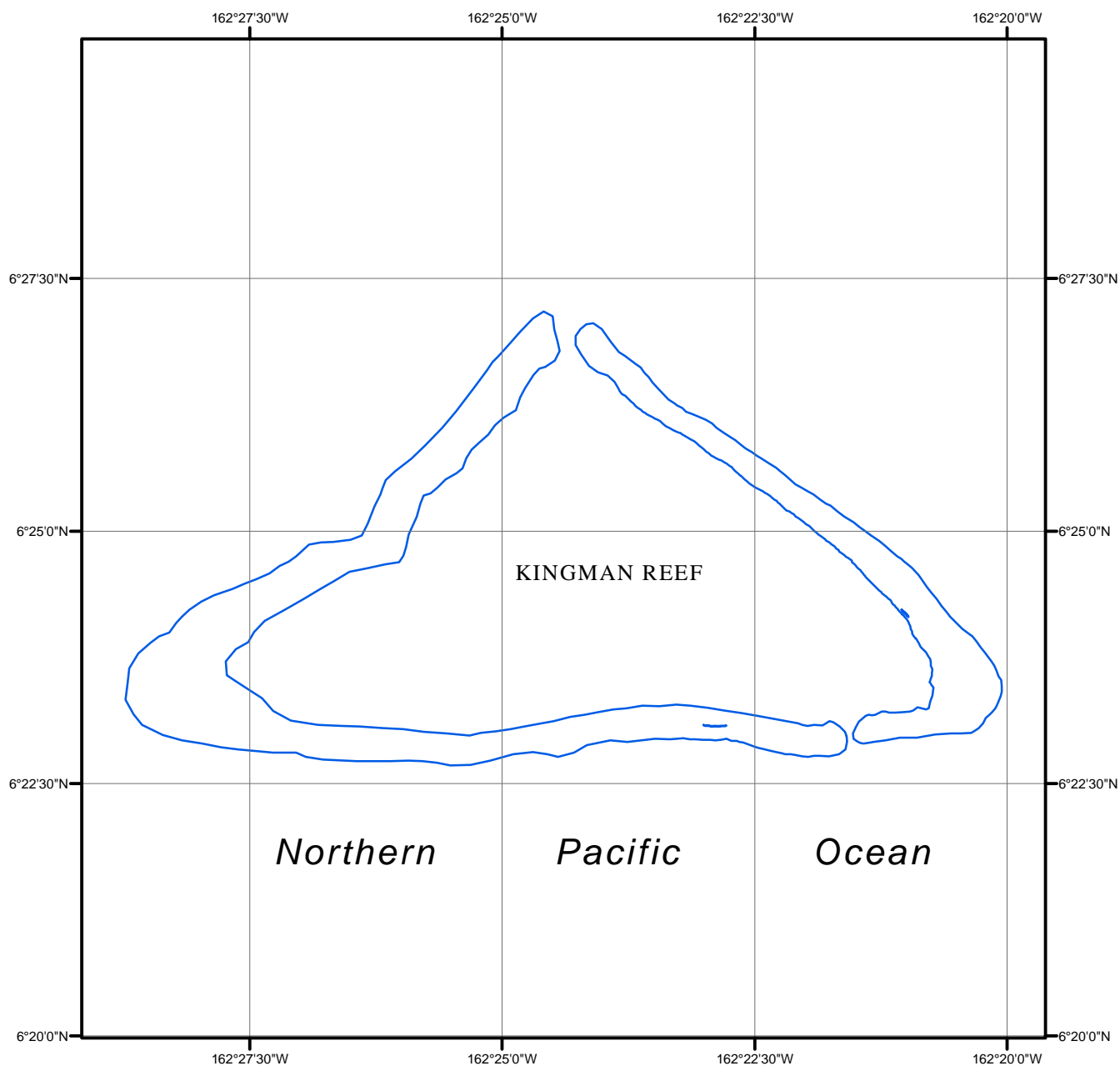
NOAA Shoreline Data Explorer

- GC10611 in shapefile format
- Metadata file for GC10611
- Digital copy of the PCR in Adobe PDF format

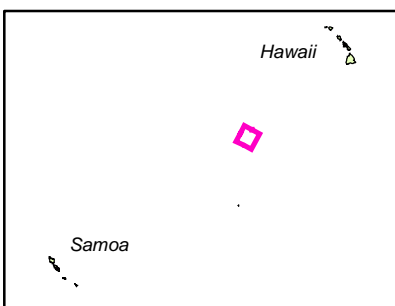
End of Report

KINGMAN REEF

U.S. PACIFIC ISLANDS



Overview



UM0505

GC10611