

Tracklines for the Bathymetric Survey USGS Cruise 07CCT01

Metadata:

- [Identification_Information](#)
 - [Data_Quality_Information](#)
 - [Spatial_Data_Organization_Information](#)
 - [Spatial_Reference_Information](#)
 - [Entity_and_Attribute_Information](#)
 - [Distribution_Information](#)
 - [Metadata_Reference_Information](#)
-

Identification_Information:

Citation:

Citation_Information:

Originator:

Nancy T. DeWitt, James G. Flocks, B.J. Reynolds, and Mark Hansen

Publication_Date: 2012

Title:

Tracklines for bathymetric survey 07CCT01

Geospatial_Data_Presentation_Form: remote-sensing image

Series_Information:

Series_Name: USGS Data Series Publication

Issue_Identification: DS722

Publication_Information:

Publication_Place: St. Petersburg, FL

Publisher: St. Petersburg Coastal and Marine Science Center

Online_Linkage: <http://pubs.usgs.gov/ds/722>

Description:

Abstract:

The Gulf Islands National Seashore (GUIS) is composed of a series of barrier islands along the Mississippi - Alabama coastline. Historically these islands have been undergoing long-term change. The devastation of Hurricane Katrina in 2005 prompted questions about the stability of the barrier islands and their potential response against future storm impacts. Additionally, there was concern from the National Park Service (NPS) about the preservation of the historical Fort Massachusetts, located on West Ship Island. Prior to 1969, Ship Island was an individual island. In 1969 Hurricane Camille breached Ship Island, widening the cut and splitting it into what is now known as West Ship Island and East Ship Island. In July of 2007, the U.S. Geological Survey (USGS) was able to provide the NPS with a small bathymetry survey of Camille Cut using high-resolution single-beam

bathymetry. This provided the GUI with a post-Katrina assessment of the bathymetry in Camille Cut and along the northern shoreline directly in front of Fort Massachusetts. Ultimately, this survey became an initial bathymetry dataset toward a larger USGS effort included in the Northern Gulf of Mexico (NGOM) Ecosystem Change and Hazard Susceptibility Project.

Purpose:

This report serves as an archive of the processed single-beam bathymetry. Data products herein include gridded and interpolated digital depth surfaces and x,y,z data products. Additional files include trackline maps, navigation files, geographic information system (GIS) files, Field Activity Collection System (FACS) logs, and formal Federal Geographic Data Committee (FGDC) metadata. Scanned images of the handwritten FACS logs and digital FACS logs are also provided as PDF files. Refer to the Acronyms page for description of acronyms and abbreviations used in this report or hold the cursor over an acronym for a pop-up explanation.

Supplemental_Information:

For navigational purposes, bathymetric surveys have traditionally been referenced to a water level datum using tide gages and tide models. Bathymetric measurements referenced to a Global Positioning System (GPS) is a more accurate way of representing water depth and has been implemented in the acquisition and processing procedures for these datasets. Previous single-beam bathymetric studies performed at the USGS Center for Coastal and Marine Science have successfully referenced bathymetric measurements to GPS (DeWitt and others, 2007; Hansen 2008 and 2009).

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20070728

Ending_Date: 20070801

Currentness_Reference: data collection interval

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None planned

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -88.996405

East_Bounding_Coordinate: -88.882288

North_Bounding_Coordinate: 30.248529

South_Bounding_Coordinate: 30.200405

Keywords:

Theme:

Theme_Keyword_Thesaurus: ISO 19115 Topic Category

Theme_Keyword: oceans

Theme_Keyword: elevation

Theme_Keyword: location

Theme:

Theme_Keyword_Thesaurus: General

Theme_Keyword: trackline

Theme_Keyword: bathymetry

Theme_Keyword: USGS

Theme_Keyword: shapefile

Theme_Keyword: HYPACK Inc.

Theme_Keyword: single-beam bathymetry

Theme_Keyword: single beam

Theme_Keyword: base station

Theme_Keyword: benchmark

Theme_Keyword: Fort Massachusetts

Theme_Keyword: BH088

Theme_Keyword: FTMA

Theme_Keyword: kinematic

Theme_Keyword: shoreline

Theme_Keyword: GeoTIFF

Theme_Keyword:

U.S. Geological Survey (USGS), St. Petersburg Coastal and Marine Science Center

Theme_Keyword: Gulf Islands National Seashore (GUIS)

Theme_Keyword: Marimatech Echosounder

Theme_Keyword: E-SEA-103 echosounder

Theme_Keyword: TSS Motion Sensor

Theme_Keyword: System for Accurate Nearshore Depth Surveying (SANDS)

Theme_Keyword: echosounder

Place:

Place_Keyword_Thesaurus: (GUIS)

Place_Keyword: Gulf Islands National Seashore (GUIS)

Place_Keyword: Mississippi

Place_Keyword: West Ship Island

Place_Keyword: East Ship Island

Place_Keyword: Camille Cut

Stratum:

Stratum_Keyword_Thesaurus: General

Stratum_Keyword: water

Temporal:

Temporal_Keyword_Thesaurus: General

Temporal_Keyword: July 2007

Access_Constraints:

The U.S. Geological Survey requests that it be referenced as the originator of this dataset in any future products or research derived from these data.

Use_Constraints: These data are not to be used for navigation.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Nancy T. DeWitt

Contact_Organization:

U.S. Geological Survey - St. Petersburg Coastal and Marine Science Center

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address

Address: 600 4th Street South

City: St. Petersburg

State_or_Province: FL

Postal_Code: 33701

Country: USA

Contact_Voice_Telephone: (727) 803-8747 x3058

Contact_Electronic_Mail_Address: ndewitt@usgs.gov

Data_Set_Credit:

Nancy T. DeWitt, James G. Flocks, B.J. Reynolds, and Mark E. Hansen.

Native_Data_Set_Environment:

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 3; ESRI ArcCatalog 9.3.1.3000

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

The accuracy of the data is determined during data collection. This dataset is from one research cruise and is therefore internally consistent. Methods are employed to maintain data collection consistency aboard the platform. During mobilization, each piece of equipment is isolated to obtain internal and external offset measurements with respect to the survey platform. All the critical measurements are recorded manually and digitally entered into their respective programs. For single-beam bathymetry, offsets between the single-beam transducers and the Ashtech antenna reference point (ARP) were measured and accounted for in post-processing. Bar checks were performed as calibration efforts and accounted for any drift in the Marimatech Echosounder. Differential Geographic Positioning (DGPS) was obtained using post-processing software packages. DGPS is always implemented for navigational accuracy either during acquisition or as a post-processing step.

Logical_Consistency_Report:

This dataset was acquired on one research cruise over the course of 7 days in 2007. Refer to the FACS logs for respective vessel platform and survey information. This dataset was created to show the bathymetry from the cruise. The grid is 50-m spacing.

Completeness_Report:

This is a complete processed bathymetry shapefile depicting the resultant tracklines for the bathymetric survey. These data provide a continuous and complete surface; however, there may in some cases be data missing and inconsistent with reported tracklines. This is directly due to the exclusion of poor data and (or) instrument failures.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

GPS base stations were erected within approximately 15 to 20 km of the survey area. Efforts were made to utilize pre-existing National Geodetic Survey (NGS) benchmarks on the islands. The GPS instrument combination at the base station is duplicated on the survey vessel (rover). The base receiver and the rover receiver record their positions concurrently at 1-second (s) recording intervals throughout the survey period. The GPS base station data were processed quickly and accurately through one of the three online submittal services commercially available: (1) Automated GPS-Inferred Positioning System (GIPSY), a service provided by National Aeronautic and Space Administration's (NASA) Jet Propulsion Laboratory, (2) On-Line Positioning User Service (OPUS), maintained by the National Oceanic and Atmospheric Administration (NOAA) and the National Geodetic Survey (NGS), and (3) Scripps Coordinate Update Tool (SCOUT). For the 2007 bathymetry, results from all three services were analyzed independently first. The final x,y,z from each service was then reviewed and averaged together. The SCOUT values differed the most from the average of the three with 1.175 m in the vertical, whereas GIPSY and OPUS differed considerably less at 0.627 m and 0.549 m, respectively. For this reason SCOUT values were not included in the final position, only GIPSY and OPUS and produced +/- 3.9 cm accuracy in the vertical component. This base station position, once finalized, was used as the base x,y,z for post-processing the base GPS to the boat GPS.

Quantitative_Horizontal_Positional_Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value: 0.001

Horizontal_Positional_Accuracy_Explanation: meters

Lineage:

Process_Step:

Process_Description:

Acquisition: This is a shapefile of the ship navigation as recorded using HYPACK version 4.3. The shapefile was created in ArcMap version 9.3.1 using the free utility Points 2 Lines version 2. Tracklines were exported from HYPACK version 4.3, converted to a DBG table, and then transformed into a shapefile using Points to Lines version 2.0.

Process_Date: 2007

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Nancy T. DeWitt

Contact_Organization:

U.S. Geological Survey St. Petersburg Coastal and Marine Science Center

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address

Address: 600 4th Street South

City: St. Petersburg

State_or_Province: FL

Postal_Code: 33701

Country: USA

Contact_Voice_Telephone: (727) 803-8747 x3058

Contact_Electronic_Mail_Address: ndewitt@usgs.gov

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: String

Point_and_Vector_Object_Count: 95

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Planar:

Grid_Coordinate_System:

Grid_Coordinate_System_Name: Universal Transverse Mercator

Universal_Transverse_Mercator:

UTM_Zone_Number: 16

Transverse_Mercator:

Scale_Factor_at_Central_Meridian: 0.999600

Longitude_of_Central_Meridian: -87.000000

Latitude_of_Projection_Origin: 0.000000

False_Easting: 500000.000000

False_Northing: 0.000000

Planar_Coordinate_Information:

Planar_Coordinate_Encoding_Method: coordinate pair

Coordinate_Representation:

Abscissa_Resolution: 0.000001

Ordinate_Resolution: 0.000001

Planar_Distance_Units: meters

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983

Ellipsoid_Name: Geodetic Reference System 80

Semi-major_Axis: 6378137.000000

Denominator_of_Flattening_Ratio: 298.25722356300003

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: 07CCT01_hy_tracklines.shp
Entity_Type_Definition: ESRI ArcGIS 9.3.1
Entity_Type_Definition_Source: ESRI ArcGIS 9.3

Attribute:

Attribute_Label: FID
Attribute_Definition: Internal feature number
Attribute_Definition_Source: ESRI ArcGIS 9.3
Attribute_Domain_Values:

Unrepresentable_Domain:

Sequential unique whole numbers that are automatically generated

Attribute:

Attribute_Label: SHAPE
Attribute_Definition: Feature Geometry
Attribute_Definition_Source: ESRI ArcGIS 9.3
Attribute_Domain_Values:

Unrepresentable_Domain: Polyline defining the features.

Attribute:

Attribute_Label: line
Attribute_Definition: Name of trackline from aquisition and post-processing
Attribute_Definition_Source: U.S. Geological Survey
Attribute_Domain_Values:

Codeset_Domain:

Codeset_Name: ###_####

Codeset_Source:

First three numbers represent the number of the line and the last four numbers represent the time at which the line was acquired.

Attribute:

Attribute_Label: year
Attribute_Definition: The year the trackline was surveyed
Attribute_Definition_Source: U.S. Geological Survey
Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 2007

Range_Domain_Maximum: 2007

Attribute_Units_of_Measure: year

Attribute:

Attribute_Label: boat
Attribute_Definition: The survey platform that collected the trackline
Attribute_Definition_Source: U.S. Geological Survey

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: cat

Enumerated_Domain_Value_Definition: RV Survey Cat

Enumerated_Domain_Value_Definition_Source: U.S. Geological Survey

Overview_Description:

Entity_and_Attribute_Overview:

This is a shapefile of the ship navigation as recorded using HYPACK version 4.3. The shapefile was created in ArcMap version 9.3.1.

Entity_and_Attribute_Detail_Citation: <<http://ngom.usgs.gov/gomsc/mscip/index.html>>

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jim Flocks

Contact_Organization:

U.S. Geological Survey St. Petersburg Coastal and Marine Science Center

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address

Address: 600 4th Street South

City: St. Petersburg

State_or_Province: FL

Postal_Code: 33701

Country: USA

Contact_Voice_Telephone: (727) 803-8747 x3012

Contact_Electronic_Mail_Address: jflocks@usgs.gov

Resource_Description: Downloadable Data File Name = 07CCT01_50m_hy_tracklines.shp

Distribution_Liability:

This CD-ROM publication was prepared by an agency of the United States Government. Although these data have been processed successfully on a computer system at the U.S. Geological Survey, no warranty expressed or implied is made regarding the display or utility of the data on any other system, nor shall the act of distribution imply any such warranty. The U.S. Geological Survey shall not be held liable for improper or incorrect use of the data described and (or) contained herein. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof.

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: SHP

File_Decompression_Technique: no compression applied

Transfer_Size: 1.20 MB

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: <<http://pubs.usgs.gov/ds/722>>

Offline_Option:

Offline_Media: CD-ROM

Recording_Format: CD-R

Fees: none

Custom_Order_Process: none

Technical_Prerequisites: This shapefile was created for use with ESRI ArcGIS software.

Available_Time_Period:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2012

Time_of_Day: unknown

Metadata_Reference_Information:

Metadata_Date: 20111220

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Nancy T. DeWitt

Contact_Organization:

U.S. Geological Survey St. Petersburg Coastal and Marine Science Center

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address

Address: 600 4th Street South

City: St. Petersburg

State_or_Province: FL

Postal_Code: 33701

Country: USA

Contact_Voice_Telephone: (727) 803-8747 x3058

Contact_Electronic_Mail_Address: ndewitt@usgs.gov

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Use_Constraints:

The U.S. Geological Survey requests that it be referenced as the originator of this dataset in any future products or research derived from these data.

Metadata_Security_Information:

Metadata_Security_Classification_System: none

Metadata_Security_Classification: unclassified

Metadata_Security_Handling_Description: None

Metadata_Extensions:

Online_Linkage: <<http://www.esri.com/metadata/esriprof80.html>>

Profile_Name: ESRI Metadata Profile