W00637

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service

DESCRIPTIVE REPORT

Type of Survey:	Habitat Mapping
Registry Number:	W00637

LOCALITY

State(s):	Florida
General Locality:	Southwest Florida
Sub-locality:	Offshore 10,000 Islands

2009

CHIEF OF PARTY
Mark Hansen

LIBRARY & ARCHIVES

Date:

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

W00637

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State(s):	**Florida**
General Locality:	**Southwest Florida**
Sub-Locality:	**Offshore 10,000 Islands**
Scale:	**40000**
Dates of Survey:	**01/01/2009 to 12/31/2009**
Instructions Dated:	**01/01/2009**
Project Number:	**ESD-PHB-22**
Field Unit:	**US Geological Survey**
Chief of Party:	**Mark Hansen**
Soundings by:	**Unknown Unknown** (**SBES**)
Imagery by:	**N/A**
Verification by:	**Pacific Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**

Remarks:

Any revisions to the Descriptive Report (DR) applied during office processing are shown in red italic text. The DR is maintained as a field unit product, therefore all information and recommendations within this report are considered preliminary unless otherwise noted. The final disposition of survey data is represented in the NOAA nautical chart products. All pertinent records for this survey are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via https://www.ncei.noaa.gov/. Products created during office processing were generated in NAD83 UTM 17N, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.

DESCRIPTIVE REPORT MEMO

November 08, 2022

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Report prepared by PHB on behalf of field unit
Mark Hansen
Oceanographer, U.S. Geological Survey

SUBJECT: Submission of Survey W00637

Restoration of the Everglades requires the implementation of many components staged temporally and spatially with results realized on different time and spatial scales. Due to extensive feeding and migratory patterns of manatees, restoration effects on Florida manatees must be modeled monitored over large time and space scales. U.S. Geological Survey efforts have focused on collecting manatee movement data throughout the Ten Thousand Islands (TTI) region, and developing an individual-based model for manatees to illustrate manatee responses to changes in hydrology related to the Picayune Strand Restoration Project (PSRP). This research on manatees is part of the USGS Southeast Ecological Science Center's (SECSC), Sirernia research project.

In order to create an accurate numerical model for manatee research, current bathymetric data must be obtained. Benthic habitat data is also needed for the creation of seagrass maps. This project addresses the collection and interpretation of data necessary to develop the present day bathymetry and benthic habitats of the TTI area. The USGS Coastal and Marine Science Center in cooperation with SECSC performed a bathymetric survey of the TTI area using a single beam hydrographic system. High resolution, acoustic bathymetric surveying is a proven method to map ocean and bay floor elevations.

Single-Beam bathymetry in a 4m resolution grid was created in XYZ format.

All soundings were reduced to Mean Lower Low Water using VDatum. The horizontal datum for this project is North American Datum of 1983 (NAD 83). The projection used for this project is Universal Transverse Mercator (UTM) Zone 17.

Horizontal Control:
Differential Geographic Positioning System (DGPS) coordinates were obtained using post-processing software packages developed by the National Oceanic and Atmospheric Administration (NOAA)/National Geodetic Survey (NGS) Online Positioning User Service (OPUS). The kinematic (rover) trajectories were processed using PNAV v2.0, by ASHTECH, Inc. A horizontal error

measurement, RMS is computed for each epoch. The horizontal trajectory errors for varied between 0 and 0.08(m).

Vertical Control:
GPS base or differential reference stations were operated within approximately 15 to 20 km of the survey area. Five new temporary ground-control points or benchmarks (surveyed to within 1 cm to 2 cm accuracy) were established throughout the study area for use as reference receiver sites using standard benchmarks procedures. All static base station GPS sessions were submitted for processing to the online OPUS, GIPSY, and SCOUT system software. The computed base location results were entered into a spreadsheet to compute one final positional coordinate and error analysis for that base location. The final positional coordinate (latitude, longitude, and ellipsoid height) is the weighted average of all GPS sessions. For each GPS session, the weighted average was calculated from the total session time in seconds; therefore, longer GPS occupation times held more value than shorter occupation times. Results were computed relative to ITRF00 coordinate system. The established geodetic reference frame for the project was WGS84. Therefore, final reference coordinates used to process the rover data were transformed from ITRF00 to WGS84 using National Oceanic and Atmospheric Administration/National Geodetic Survey(NOAA/NGS) HTDP software v2.1. The kinematic (rover) trajectories were processed using PNAV v2.0, by ASHTECH, Inc. A vertical error measurement, RMS is computed for each epoch. The vertical trajectory errors for varied between 0 and 0.08(m). The combined vertical error from base station coordinate solutions and rover trajectories range from 0 and 0.14 (m), with the average approximately 0.08 (m).

All survey systems and methods utilized during this survey were as described in DS1031-10KIslands_WGS84_NAVD88-G03_SB_metadata.xyz.txt.

All data were reviewed for DTONs and none were identified in this survey.

U.S. Geological Survey acquired the data outlined in this report. Data are available at https://doi.org/10.3133/ds1031. Additional documentation from the data provider may be attached to this report.

This survey does meet charting specifications and is adequate to supersede prior data.