

W00613

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

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: W00613

LOCALITY

State(s): Florida

General Locality: South Florida

Sub-locality: St. Lucie River

2003

CHIEF OF PARTY
Mark Hansen

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

W00613

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: **South Florida**

Sub-Locality: **St. Lucie River**

Scale: **40000**

Dates of Survey: **01/01/2003 to 12/31/2003**

Instructions Dated: **01/01/2003**

Project Number: **ESD-PHB-22**

Field Unit: **US Geological Survey**

Chief of Party: **Mark Hansen**

Soundings by: **Marimatech E-Sea 103 (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

September 30, 2022

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Report prepared by PHB on behalf of field unit
Mark Hansen
Principal Investigator, USGS

SUBJECT: Submission of Survey W00613

This project addresses the collection and interpretation of data necessary to develop the present day bathymetry of the Loxahatchee River, and St. Lucie River regions. This project supports several SFWMD efforts including the proposed MFL development for the Loxahatchee and St. Lucie River MFLs and the Indian River Lagoon Feasibility Study. All of these state-mandated efforts would utilize data obtained from these surveys to develop hydrodynamic models, which are essential in understanding the ecological processes of each of these coastal systems. This project also supports other non-modeling efforts such as the determination of the oligohaline zones in the St. Lucie River systems.

Geographic information system data products include a XYZ data, bathymetric contours, and USGS quadrangle map

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.

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. It should be noted that during ESD ingest, Vdatum was used to convert the original XYZ file from WGS84 to Nad83 UTM 17. Due to a lack of Vdatum coverage, a static vertical shift of 0.4 meters more shoal was applied to the XYZ to shift from NAVD88 to MLLW (0.4 meters is the Vdatum separation value that is closest to the survey area). The shifted XYZ file was then imported CARIS Base Editor 5.5 as a point cloud which was then imported as a 3 meter grid (metadata file states that soundings were spaced 3 meters apart).

All survey systems and methods utilized during this survey were as described in W00613_Metadata.txt. Gridded uncertainty was generated during review, and calculated to be equal to 0.5m + 1% depth. This value was selected as a result of metadata that provides high confidence in the system integration and high quality sounding equipment. For example, the hydrographer

utilized post-processing kinematics and an OPUS solution leading to an average RMS value of 0.08m.

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.