U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with the
NATIONAL PARK SERVICE

BISCAYNE BAY LIDAR BATHYMETRIC MAP SERIES
MAP TILE 582000E_2806000N

80°10'45"W 583000m E 80°10'25"W 80°10'5"W

25°21'50"N 25°21'30"N 25°21'10"N

80°11'5"W 80°10'45"W 583000m E 80°10'25"W 80°10'5"W

Submarine topography from NASA EAARL Lidar Surveys, 2001, 2002.
Universal Transverse Mercator Projection
Zone 17 North
North American Datum of 1983

SCALE 1:2400

0.075 0.0375 0 0.075 0.15 0.225 0.3 MILES

0.1 0.05 0 0.1 0.2 0.3 0.4 KILOMETERS

NORTH AMERICAN VERTICAL DATUM OF 1988

CONTOUR LINES ARE SHOWN AT 1-METER INTERVALS

NAVD 88 Elevation (meters)

-1.5 -2.5 -3.5 -4.5 -5.5 -6.5 -7.5 -8.5 -9.5 -10.5 -11.5 -12.5

NO DATA

EAARL Lidar Submarine Topography of Biscayne National Park
Image Map Tile 582000e_2806000n

By

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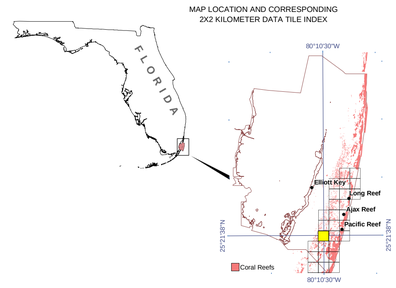
2003

MAP LOCATION AND CORRESPONDING
2X2 KILOMETER DATA TILE INDEX



BISCAYNE NATIONAL PARK BOUNDARY

INTERIOR--GEOLOGICAL SURVEY, ST. PETERSBURG, FL--2003

Bathymetry mapped using NASA Experimental
Advanced Airborne Research Lidar (EAARL)
September 2001 and August 2002

Cooperators:
The National Aeronautic and Space Administration (NASA)
The National Park Service (NPS)

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PROJECT DESCRIPTION

This lidar-derived submarine topography map was produced within a collaboration between the U.S. Geological Survey's Coastal and Marine Geology Program and NASA's Wallops Flight Facility. One objective of this research is the creation of techniques for the surveying of coral reefs for the purposes of habitat mapping, ecological monitoring, change detection, and event assessment (e.g., bleaching, hurricanes, disease outbreaks, etc.). As part of this project, data from an innovative instrument under development at NASA Wallops Flight Facility, the NASA Experimental Airborne Advanced Research Lidar (EAARL), is being used. This sensor has the potential to make significant contributions in this realm for measuring water depth and conducting cross-environment surveys. High spectral resolution, water-column correction, and low costs were found to be key factors in providing accurate and affordable imagery to managers of coastal tropical habitats.

DATA DESCRIPTION

The laser soundings used to create this map were collected during July and September 2001 and August 2002 by the aircraft mounted NASA EAARL sensor. The EAARL uses a multiple return green laser. The data is processed by the USGS Center for Coastal and Watershed Studies to merge flightlines together and ultimately produce 1-meter resolution geotiff images for use in GIS. This 2x2 kilometer data tile is indexed to a 10x10 kilometer index tile, referenced to the UTM grid.

REFERENCES

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Brock, J.C., Wright, C.W., Nayegandhi, A., Clayton, T., Hansen, M., Longenecker, J., Gesch, D., and M. Crane, 2002, Initial results from a test of the NASA EAARL lidar in the Tampa Bay Region, Paper in the Proceedings of the 2002 Gulf Coast Association of Geological Societies Conterence, Austin, Texas, Oct. 30 - Nov. 1.

Wright, C.W. and J. Brock, 2002, EAARL: A lidar for mapping shallow coral reefs and other coastal environments, Paper in the Proceedings of the Seventh International Conterence on Remote Sensing for Marine and Coastal Environments, Miami, 20-22, May 2002.