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barrier island geomorphology and habitats, and to enable the monitoring of ecological and geological change within National Seashores. This product is based on data from an innovative airborne Light Detection and Ranging (LiDAR) instrument under development at the NASA Wallops Flight Facility, the NASA Experimental Advanced Airborne Research Lidar (EAARL).

Data Description

The laser soundings used to create this map were collected during September, 2005, a few days after Hurricane Katrina made landfall along the Gulf coast, by the NASA EAARL system mounted on a Cessna 310 aircraft. The EAARL uses a "waveform-resolving" green laser capable of mapping submarine and subaerial (land) topography in a single overflight. The EAARL system is typically flown at 300 m altitude AGL, resulting in a 240 m swath for each flightline. Data collection occurred with approximately 50% overlap between flightlines, resulting in about one laser sounding per square meter. The data were processed by the USGS FISC (Florida Integrated Science Center) office, St. Petersburg, FL to produce 1-meter resolution raster images that can be easily ingested into a Geographic Information System (GIS). The data were organized as 2 km by 2 km data tiles in 32-bit floating-point integer GeoTiff format. Contour line and hillshade layers were generated from the Lidar data tile and incorporated into this map product.

Further Reading

Brock, J.C., and Sallenger, A., 2001, Airborne topographic Lidar mapping for coastal science and resource management: U.S. Geological Survey Open File Report 01-46, p. 4.

- Brock, J.C., Wright, C.W., Nayegandhi, A., Clayton, T., Hansen, M., Longenecker, J., Gesch, D., and Crane, M., 2002, Initial results from a test of the NASA EAARL Lidar in the Tampa Bay Region: Transactions of the Gulf Coast Association of Geological Societies, v. 52, p. 89-98.
- Wright, C.W. and Brock, J.C., 2002, EAARL: A Lidar for mapping shallow coral reefs and other coastal environments, *in* the Proceedings of the Seventh International Conference on Remote Sensing for Marine and Coastal Environments, Miami, May 20-22, 2002: Ann Arbor, MI, Veridian International Conferences, 1 computer optical disc.
- Nayegandhi, A., Brock, J.C., Wright, C.W., OConnell, M.J., 2006, Evaluating a small footprint, waveform-resolving lidar over coastal vegetation communities, Photogrammetric Engineering and Remote Sensing, Vol. 72, No. 12. pp. 1407-1417.

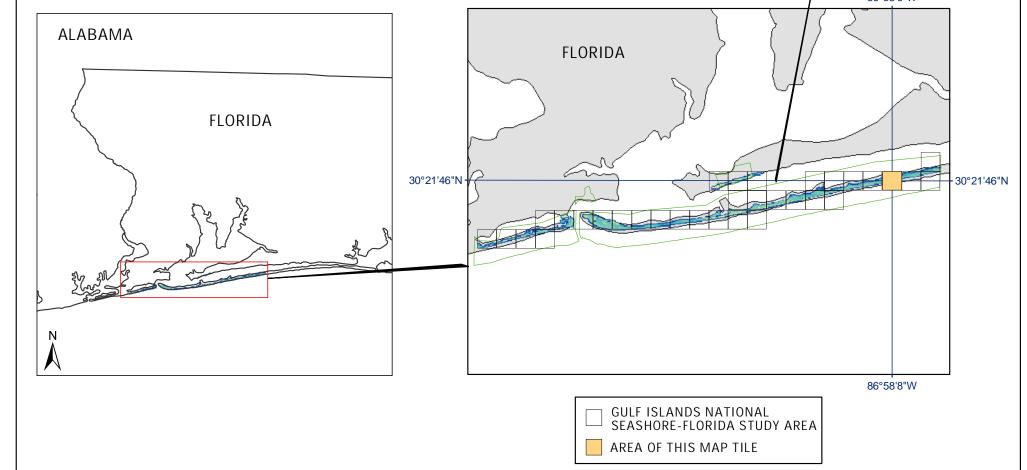
CONTOUR INTERVAL 1 METER

Gulf Islands National Seashore-Florida USGS-NPS-NASA EAARL Bare Earth (BE) Lidar Topography Map Tile 502000e_3360000n_16z Santa Rosa Island

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