Project Description

This lidar-derived topographic map was produced as a collaborative effort between the U.S. Geological Survey (USGS) Coastal and Marine Geology Program, FISC St. Petersburg Center, the Northeast Coastal and Barrier Network of the National Park Service (NPS) Inventory and Monitoring Program, the South Florida/Caribbean Network of the NPS Inventory and Monitoring Program, and the National Aeronautics and Space Administration (NASA) Wallops Flight Facility. The project's objective was to produce a public domain product that can be used for the monitoring of coastal and geologic response to natural processes. The product's broad goal is to advance advanced survey techniques for mapping 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 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 July 2001, September 2001, and August 2002 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 St. Petersburg Center 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

