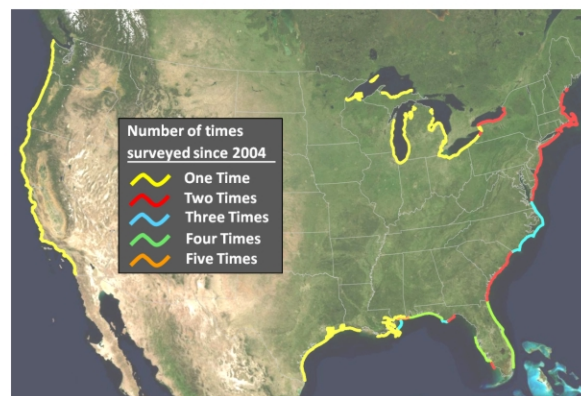


# U.S. Army Corps of Engineers National Coastal Mapping Program

The U. S. Army Corps of Engineers (USACE) National Coastal Mapping Program (NCMP) provides high-resolution bathymetric and topographic lidar elevation data, as well as hyperspectral and true-color aerial imagery along a 1-mile swath of the coastal U.S. on a recurring basis. USACE Headquarters funds the NCMP to support regional sediment management, construction, operations, and regulatory functions in the coastal zone. The NCMP is executed by the Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX), using its in-house survey capabilities: the Compact Hydrographic Airborne Rapid Total Survey (CHARTS) system, and the newly developed Coastal Zone Mapping and Imaging Lidar (CZMIL, deployment scheduled for 2012). Survey data are used to develop a suite of GIS data products:

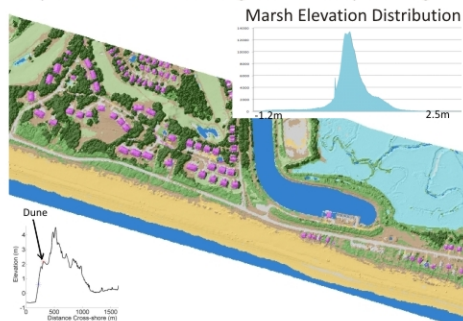
- seamless bathy/topo grids
- bare earth bathy/topo grids
- building footprints
- shoreline vector
- basic land cover classification
- seafloor reflectance images
- true-color aerial image mosaics
- hyperspectral image mosaics

Since the NCMP was initiated in 2004, airborne lidar elevation data and imagery have been collected for approximately 16,000 km of shoreline along the Gulf, Atlantic, and Pacific Coasts, as well as the Great Lakes, using both CHARTS and similar capability available through commercial contract. The NCMP will return to the Great Lakes in 2012.



## Support for Physical and Environmental Studies:

- **Land Cover and Habitat Classification:** Identification of critical physical and natural features in the landscape for resource management and planning
- \* Habitat maps
- \* Wetlands identification
- \* Change detection/monitoring
- \* Alternative scenario assessment
- \* Model input
- \* Climate change/risk assessment



- **Invasive and Critical Species Detection:** Discrimination of invasive and critical species for ecosystem restoration and monitoring, as well as environmental assessment



- \* Species composition
- \* Invasive/threatened/endangered species

- \* Ecosystem restoration and monitoring

- \* Feasibility study and environmental impact assessment

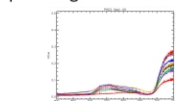


- **Benthic Habitat and Water Quality Characterization:** *Seafloor and Benthic Habitat*- identification of habitats, such as submersed vegetation, for operations, navigation, and resource planning; *Water Quality*- estimation of parameters to support water quality monitoring and modeling

- \* Restoration/mitigation planning

- \* Operations support

- \* Water management planning



Submersed Eelgrass spectra, Plymouth Harbor, MA



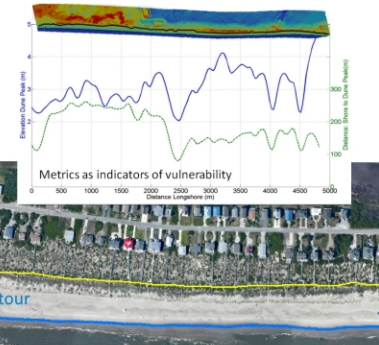
## Support for Coastal Engineering Projects:

- **Vulnerability Assessment:** Identify areas of vulnerability for risk assessment

- \* Vulnerability metrics:  
Narrow beach width  
Low dune line

- \* Modeling for risk assessment (delineate reaches for Beach-fx)

- \* Sea level change analysis



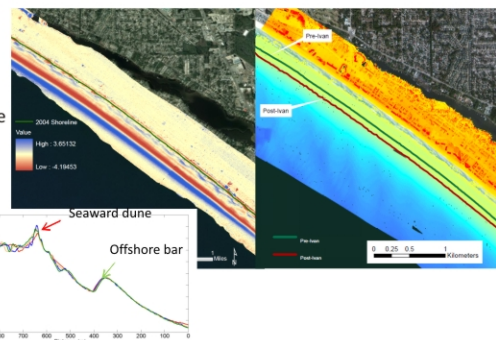
- **Storm Damage Reduction and Assessment:** Identify alternatives to reduce storm impacts and quantify pre/post storm changes for recovery efforts

- \* Shore protection project feasibility

- \* Change detection:  
elevation/volume/shoreline

- \* Storm impact assessment

- \* Structural damage quantification



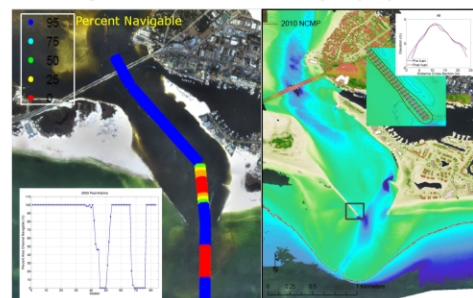
- **Project Condition and Monitoring:** *Navigation*- identification of inlet bathymetric features for navigable conditions; *Shore Protection*- quantification of volumetric change for efficient monitoring of project

- \* Regional Sediment Management

- \* Sediment budgets and pathways

- \* Monitor beach fill placement

- \* Structure condition and functional performance



For more information, please contact Jennifer Wozencraft, the JALBTCX Director and Manager of the NCMP at (228) 252-1101 or [jennifer.m.wozencraft@usace.army.mil](mailto:jennifer.m.wozencraft@usace.army.mil).

<http://www.jalbtcx.org>