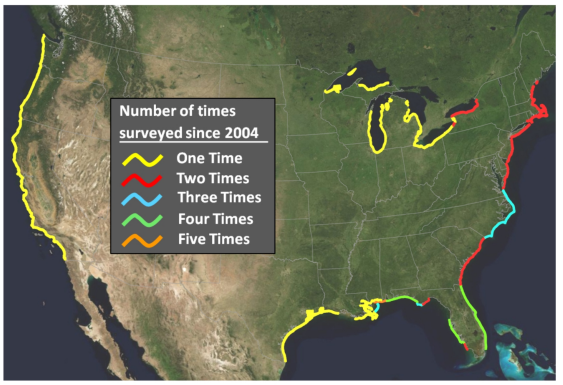
U.S. Army Corps of Engineers National Coastal Mapping Program

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 RGB 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 2011). 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**
- **RGB 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:

- Landuse/Land Cover: Identification of physical and natural features in the landscape for resource management and coastal planning

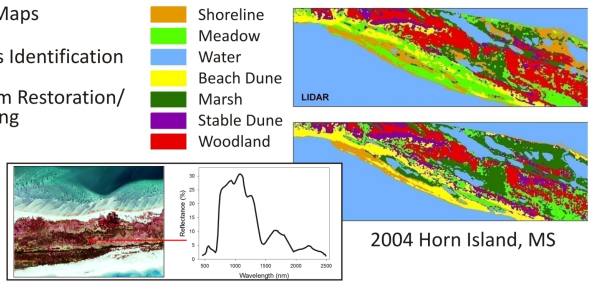
✓ Land Cover
✓ Change Detection/ Monitoring
✓ Post-storm Analysis

2009 Orleans Ave. Canal, LA

17th St. Canal

- Habitat/Species Composition: Discrimination of habitats for ecosystem restoration and monitoring (e.g. coastal wetlands); Identification of vegetation species for environmental assessment (e.g. invasive, threatened, and endangered species)

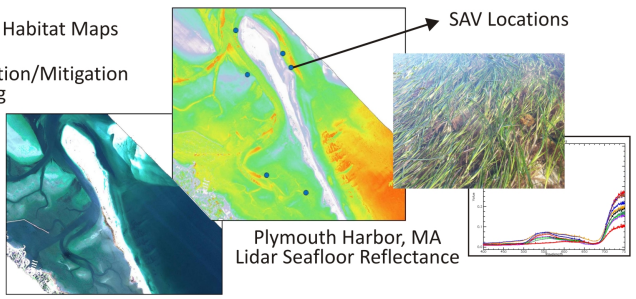
✓ Habitat Maps
✓ Wetlands Identification
✓ Ecosystem Restoration/ Monitoring



2004 Horn Island, MS

- Benthic Habitat Characterization: Mapping of the seafloor and benthic habitats, such as Submersed Aquatic Vegetation (SAV) and oyster reefs

✓ Benthic Habitat Maps
✓ Restoration/Mitigation Planning

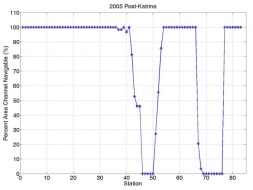


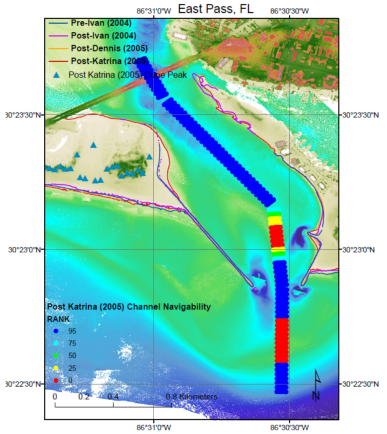
Plymouth Harbor, MA
Lidar Seafloor Reflectance

Support for Coastal Engineering Projects:

- Shore Protection: Quantification of volumetric change associated with geomorphic features, such as dune peak and shoreline, for efficient monitoring of project performance
- Navigation: Identification of inlet bathymetric features (ebb shoal, channel) for navigable conditions; Delineation of navigation structures

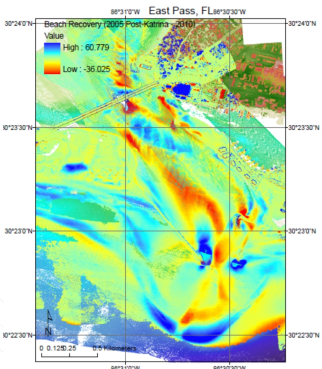
✓ Shoreline Change
✓ Dune Peak
✓ Navigable Channel Conditions
✓ Shore Protection and Navigation Project Monitoring

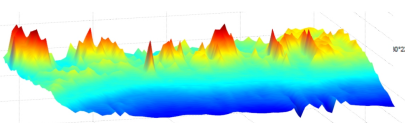




- Storm Damage Assessment: Quantification of pre/post storm elevation change for recovery efforts

✓ Elevation Change
✓ Post-storm Recovery
✓ Coastal Vulnerability Assessment





Post-storm Recovery
Elevation Change
(blue = accretion, red = erosion)

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.
http://www.jalbtcx.org