



CENTER FOR COASTAL & OCEAN MAPPING NOAA-UNH JOINT HYDROGRAPHIC CENTER

COASTAL PROCESSES

Investigating the Effects of Natural and Anthropogenic Forces in the Coastal Region

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& OCEAN MAPPING
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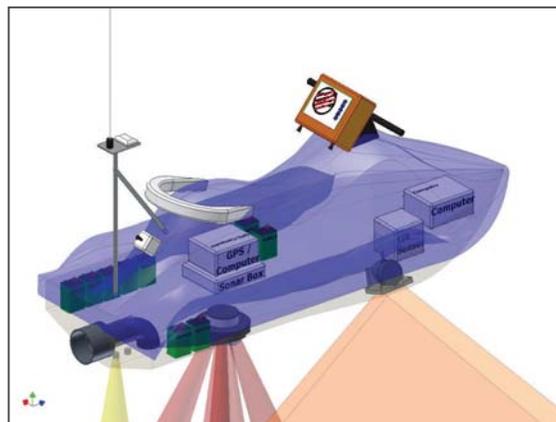
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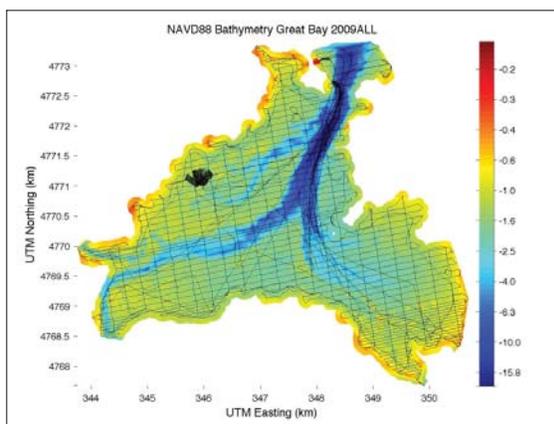
The coastal region can present unique challenges for bathymetric mapping due to shallow water, rapidly flowing water and shifting sands, breaking waves, and submerged hazards. CCOM/JHC is in the forefront of developing tools and techniques to overcome these challenges, collect data, and apply it to critical coastal-process questions of relevance to NOAA.

Among the unique tools used to measure bathymetry in very shallow waters is the Coastal Bathymetry Survey System (CBASS) developed by research associate professor Tom Lippmann. The CBASS wave-runner system increasingly takes advantage of the center's expertise in various instrumentation, including multi-beam echo sounding and GPS-aided inertial navigation systems. Such systems will allow investigators to accurately examine very small-scale bedform evolution, bottom roughness, and shallow-water seafloor characterization for the first time.



Schematic of the CBASS wave-runner showing its modifications.

The high maneuverability of the CBASS personal watercraft makes very shallow water bathymetric surveys possible with acoustic altimeters, particularly in regions where airborne remote sensing systems fail, due to water clarity issues, or where repeated high-resolution surveys are required because of the rapidly shifting, eroding seafloor.



Great Bay bathymetry surveyed by the CBASS. Elevations are in meters relative to NAVD88 and are shown on a log color scale to enhance the shallow water relief.

able to adequately sample before but then relating that back to science related issues, like how waves and currents move sand and rearrange shallow, nearshore regions, including sandy beaches, inlet environments, estuaries, and even out on the shelf.”

Harbor entrances are another coastal area being investigated using these new systems. These are areas of particular interest to mariners because of the navigational hazards they present. It is also a region of high scientific interest because sediment fluxes through inlets are often high and thus play an important role in contaminant transport and in determining the rate of organic carbon transport to the continental shelf by rivers.

Says Lippmann, “I’m interested in techniques and measurement systems in probing new environments we haven’t been

