

## NOAA-USGS BATHY/TOPO/SHORELINE TAMPA BAY DEMONSTRATION PROJECT

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In this joint demonstration project for the Tampa Bay region, NOAA's National Ocean Service (NOS) and the U.S. Geological Survey (USGS) have blended their bathymetric and topographic data sets into a digital elevation model (DEM) with all data initially referenced to the ellipsoid, but transformable to any of 26 orthometric, 3-D, or tidal datums. The datum transformation tool used to transform the bathymetric and topographic data is being provided as a user-friendly tool. A fully calibrated hydrodynamic model of Tampa Bay was used to determine the geographic distribution of the tidal datums. Recent high-resolution third-party bathymetric and topographic data are being incorporated into the DEM. Up-to-date high-resolution shoreline is also being developed using data from several airborne and satellite remote sensing sources. Where data permits, attempts will be made to produce a higher-resolution "shoreline zone" in the DEM, from which various internally consistent "shorelines" can be generated by moving the water level in the DEM to the desired tidal datum heights. A number of visualizations (including fly-throughs) have been created. The DEM, shoreline, and additional data layers will ultimately be available from a Web-accessible database and on CD-ROM in a GIS-compatible format that will best meet users needs while preserving maximum data resolution.

The web-accessible bathy/topo DEM and accompanying shorelines will not only solve the problem of inconsistency between NOS and USGS products that has caused difficulty for coastal managers, but it will also provide a standard DEM onto which others can append their bathymetric and topographic data. The datum transformation tool and metadata standards will be made available to all users to facilitate this process. A great variety of other types of marine and terrestrial geospatial data will be added to the bathy/topo DEM.

This is the first step toward the development of a mutually agreed upon "national shoreline". For NOAA and USGS it represents a seeking out of new ways of doing business with each other that will reduce duplication of effort and better meet the needs of state and county agencies. The applications benefiting from the bathy/topo DEM include: improved hurricane evacuation plans (based on improved storm surge modeling); improved and consistent geospatial data for county planners; better located habitat restoration projects; and detailed electronic nautical charts, to name just a few. Also important, the nature of this project promotes metadata standards and therefore the

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reliable use of data from many different sources. This project is viewed as a “demonstration” in the broadest sense, and will include a variety of promising new technical and scientific techniques.

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