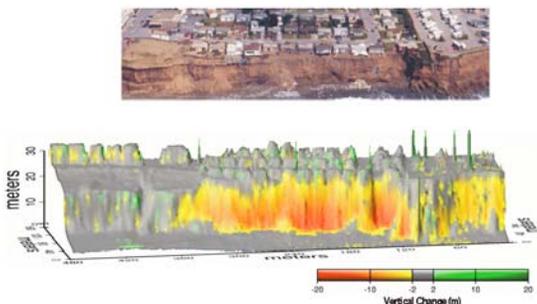


High-Resolution Elevation Data: Applications in the Coastal Zone

The National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center works with the coastal resource management community to develop data and share technology for topographic issues. High-resolution elevation data help decision makers address a diversity of issues in the coastal zone:

- Habitat mapping
- Floodplain mapping
- Orthorectification of high-resolution imagery
- Storm surge modeling
- Understanding long-term erosion trends
- Post-storm beach elevation mapping, volume change, and shoreline vulnerability
- Establishment of setback lines

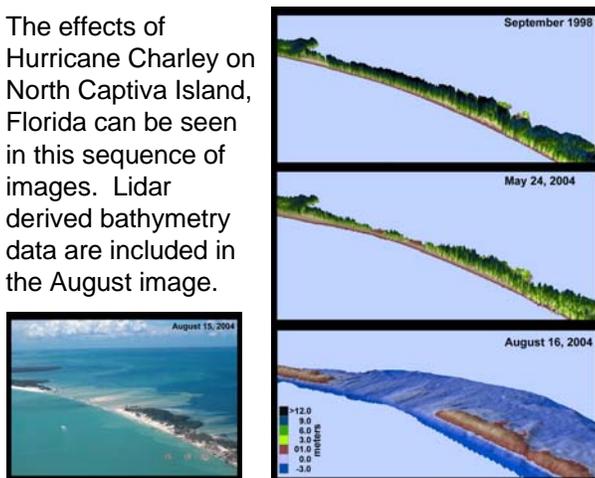
Erosion Analysis



April 1998: Post El Niño oblique aerial photo of Pacifica, California and light detection and ranging (lidar) elevations. Colors on the elevation figure show the amount of vertical change from September 1997 to April 1998.

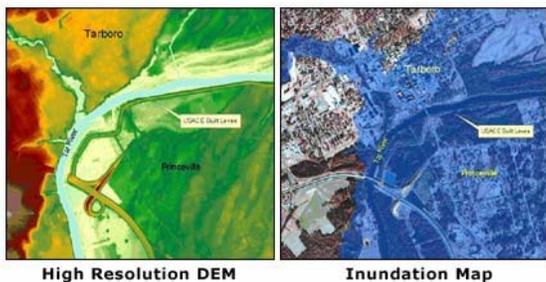
Visualization of Coastal Change

The effects of Hurricane Charley on North Captiva Island, Florida can be seen in this sequence of images. Lidar derived bathymetry data are included in the August image.



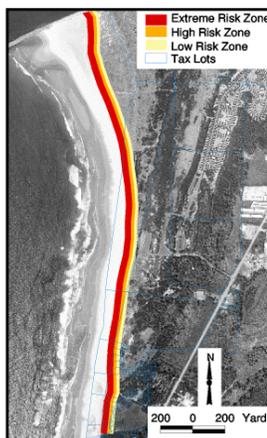
Source: USGS Coastal and Marine Geology Program

Floodplain Mapping



Inundation maps can be created by using water surface elevation data and a high-resolution digital elevation model (DEM). The DEM shown here was created from bare earth mass points and break line data taken from a lidar elevation data set collected by the North Carolina Flood Mapping Program.

Decision-Support Tool Parameterization



Elevation data are required inputs for many decision-support tools. This image shows the erosion risks associated with different areas along a shoreline in Oregon. Elevation data are also used to drive hydrologic models, water quality models, and storm surge models.

For More Information, Contact:

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