Coastal Data, Visualized

Planners need only look at communities along the U.S. oceans and Great Lakes to see the changing state of the nation writ large. According to the U.S. Census Bureau, the population living in coastal watershed counties grew by 50.9 million between 1970 and 2010. Other coastal sectors that have grown apace include development and infrastructure, the coastal economy, and—for a variety of reasons—hazards such as intensified storms, floods, and sea-level rise.

Coastal community planners have their hands full trying to understand and weigh these factors in their decisions, let alone clearly explaining the data that help justify decisions. In such cases a picture truly is worth 1,000 words. Planners using the Digital Coast have at their disposal an online suite of data, tools, and training that makes data and information easy to picture and use when considering potential plans and decisions.

"We develop our products to be accessible and visual, because we want Digital Coast to be used by all of the coastal players, not just those of us who are technologists," says Nicholas Schmidt, acting deputy director of the National Oceanic and Atmospheric Administration's Coastal Services Center. The center leads the Digital Coast Partnership effort.

The American Planning Association is one of seven national partners behind the Digital Coast. Many training sessions and webinars have been approved for AICP certification maintenance credits. Resources include the following:

CanVis. With this tool, existing photos provide the backdrop and more than 700 objects from the CanVis library can be added, including water, docks, marsh grass, and buildings. For instance, users have illustrated the likely visual impacts of coastal flooding and shown how offshore wind farms could affect shoreline vistas. Web-based CanVis training is available.

Coastal County Snapshots. This tool provides users with an instant summary

Image courtesy of the Sea Level Rise and Coastal Flooding Impacts Viewer
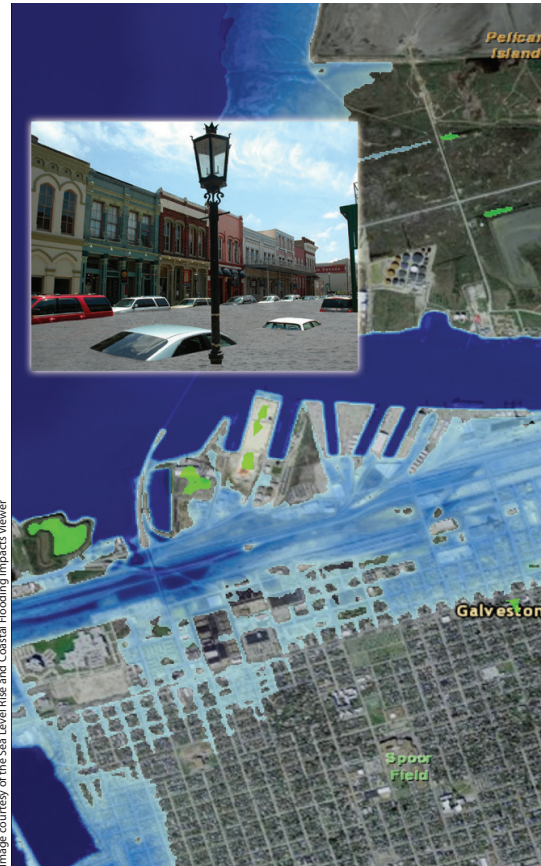
How might a segment of Galveston, Texas, be affected by six feet of sea-level rise? The mapped model and visualization shown here paint a picture.

of their county's natural resources, coastal economy, and vulnerability to hazards. Downloadable fact sheets and graphics show the number of critical facilities and percentage of vulnerable population in the flood zone, the percentage of ocean-related jobs and businesses, and practical steps to help communities become more resilient.

Data Access Viewer. Geospatial data users can view and download a wide variety of coastal data sets, simply by typing the location name or "drawing" a box around the area on a map. For example, a data search for "San Francisco Bay" brought up 18 different data sets detailing land cover, imagery, and elevation data.

Economics: National Ocean Watch. Seeing the facts about a coastal community's economic activity and characteristics can help officials protect local businesses while

addressing natural hazards and the impacts of climate change. ENOW spotlights six economic sectors that depend on the oceans and the Great Lakes. The website features county, state, and national data about jobs, wages, and the U.S. gross domestic product.

Land Cover Atlas. Atlas users get instant, county-specific maps and charts that enable them to understand the effects of past land-use decisions, document trends, and consider future land-use planning needs. The data cover development and impervious surfaces, forests and fragmentation, and wetlands.

Sea-Level Rise and Coastal Flooding Impacts Viewer. An easy slider bar and "zoom" feature enable users to view local models of sea-level rise plus simulations illustrating the possible effects of various sea levels on community landmarks. Users can overlay social and economic data on mapped areas illustrating different sea levels. They also learn tips about flood frequency and communicating sea-level rise uncertainties.

The Digital Coast continually adds to product offerings. "We know that dealing with the 'people' part of coastal issues is a big aspect of planners' jobs, so we will be adding more social science data and tools over time," says Schmidt. "Giving coastal communities as complete a picture as possible is what we aim for." ∎

Kitty Fahey

Fahey is a writer with I.M. Systems Group at the NOAA Coastal Services Center. The center supports the environmental, social, and economic well-being of the coast by linking people, information, and technology. More information on the Digital Coast resources can be found at www.csc.noaa.gov/digitalcoast.