

COASTAL CONNECTIONS



VOLUME 7, ISSUE 4

A BIMONTHLY PUBLICATION FOCUSED ON TOOLS FOR COASTAL RESOURCE MANAGERS

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Lupe Aumavae-Tauanu'u

Division Head,
American Samoa
Government
Department of Commerce,
Resource Management
Division

Where you live: In the village of Leone on Tutuila Island in American Samoa.

Job description: Our division manages coastal resources and land-use permitting for the entire territory. I also handle some permitting coordination duties, write grants, and speak to groups about conserving resources.

Education: B.S. in political science, Oregon State University. Previous positions include work as a congressional aide in Washington, D.C., and two years as an American Samoa Fellow working in the office of Senator Daniel Inouye of Hawaii.

Family: Husband, Papali'i; 11-month-old daughter, Iliganoa.

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FOCUS

SEEING IS BELIEVING

High-accuracy land elevation and seafloor data are musts for coastal professionals making credible, critical decisions. The Center's on-line inventory can end the data search.

Topography, bathymetry, topobathy, lidar—these technical terms for elevation data are becoming part of the daily vocabulary for coastal professionals who must contend with threats that cross the land-sea interface, from hurricanes to inundation and sea level rise to tsunamis.

Until recently, however, precise land elevation and seafloor data were often highly sought after but difficult to locate. That's because documentation on the data was not centralized but housed by countless agencies and institutions across the nation.

That state of affairs has changed for the better with an on-line data inventory of the Southeast Atlantic, Gulf of Mexico, and Lake Ontario coastal regions. The Topographic and Bathymetric Data Inventory is a product of the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center (see www.csc.noaa.gov/topobathy/viewer/).

This new inventory creates a happier situation for coastal modelers—and those who make decisions based on their products—than the dilemma that confronted some of them during the hurricane season of 2005.

"Fast is fine, but accuracy is everything."

Xenophon, ancient Greek historian

Xenophon has a point—but not one that was any help to Maria Honeycutt.

Four summers ago, Honeycutt, now a climate and hazards policy analyst with NOAA's Coastal Services Center, was working as a technical assistance contractor for the Federal Emergency Management Agency (FEMA) when the two-headed hydra of Hurricanes Katrina and Rita roared ashore.

After the hurricanes, Honeycutt and her colleagues were immediately given the task of reanalyzing coastal flood hazards along the Gulf coast of Mississippi and Louisiana and producing recovery

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The most fulfilling aspect of your work: As a proud Samoan woman, I find this job very rewarding, because I witness the things we accomplish that benefit the territory and the Samoan people.
Things you do in your spare time: Right now, taking care of my daughter!

"I love my work, even though life is hectic and the department is temporarily short-staffed," says Aumavae-Tauanu'u, who began her position two months after giving birth to her daughter, Iliganoa.

Aumavae-Tauanu'u has traveled the world to come back to her home, and she sees her mission as an important one. "We're a very traditional people who have a special relationship with the U.S. government—we own our land, and our strongest ties are through extended family and community," she says of the Samoan people. "So, when coastal managers discuss ways to sustain the environment, Samoans sometimes think, 'It's our land, and you cannot tell us how to take care of it.'"

As someone who understands the Samoan culture from the inside out, Aumavae-Tauanu'u would like to bridge this communication gap in a time of growing population and environmental pressures. "There are many aspects of Samoan language and culture that should be preserved—for instance, taking care of our coral reefs and growing more of our own food here, rather than importing so much food. If we can encourage people to take another look at the older, more sustainable ways of living, the traditional ways will not be lost."

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maps to help guide post-storm reconstruction. Long before Katrina made landfall, FEMA and the State of Mississippi had been working to update the Flood Insurance Rate Maps (FIRMs) used by state and local officials to administer the National Flood Insurance Program. Unfortunately, the hurricanes struck before the new FIRMs were ready.

Honeycutt and her team were under pressure to complete the fastest, most accurate and up-to-date flood recovery maps possible. A mad scramble began to locate and process the necessary data and products.

"Suddenly we needed all of the data yesterday; plus we had to figure in all the ways that these hurricanes had changed our understanding of the flood risks," says Honeycutt. Mississippi's Governor Haley Barbour expected the results on his desk by November 14—only 11 weeks after Hurricane Katrina—and public officials wanted to use the maps to make reconstruction decisions potentially affecting thousands of Mississippians.

To create the recovery maps, Honeycutt and her team had to compile and analyze data on every recorded storm that had hit the northern Gulf coast. "There were so many needs—historical flood information, Katrina and Rita high-water marks, high-resolution topography [land elevation] and bathymetry [seafloor] data. We had people scouring the country, because the data were scattered everywhere."

Data inconsistencies were not acceptable. "We learned by mid-October that the State of Mississippi had collected important lidar data for the three coastal counties as part of the ongoing FIRM update—but then

we discovered that the newest data for two counties had gone through post-processing and quality-control while the data for the third county had not. Needless to say, we didn't dare use new, high-resolution data for two counties and older data for the third," notes Honeycutt.

"Through a heroic effort, the team responsible for the lidar processing worked around the clock to get the final county's data to us in early November," she stresses. "We finished a technical analysis of that county's flood risk, mapped the updated flood data for all three counties, did the quality control, and got everything up on the project website in less than 10 days!"

Honeycutt and her colleagues survived the ordeal, and the flood-recovery maps were placed on Governor Barbour's desk on deadline, as promised. But the experience was an enormous wake-up call—for coastal managers on the Gulf Coast and around the nation—on the need for a centralized inventory of highly accurate coastal data.

"We are drowning in information but starved for knowledge."

John Naisbitt, author

"After the 2005 hurricane season, we saw that resource managers and others really needed a centralized place on-line where they could locate an index of the best available elevation data for their area," says Lynne Betzhold, a hazards and remote sensing specialist on contract with the NOAA Coastal Services Center. "But they also

needed access to all that is known about the data," she emphasizes.

The Center collected information from agencies at all levels of government that provide topographic or bathymetric data at no cost or for a small fee. Special assistance was provided by the U.S. Army Corps of Engineers, U.S. Geological Survey, North Carolina Floodplain Mapping Program, and NOAA's National Geophysical Data Center. Background and supplementary information related to the data sets was also collected. The resulting inventory is one of several products featured on the Center's on-line resource, Roadmap to a Seamless Topobathy Surface (see www.csc.noaa.gov/topobathy/).

The newest component of the inventory, the Topobathy Inventory Interactive Viewer, enables users to "zoom" to areas of interest in the Southeast Atlantic and Lake Ontario coastal regions, where pop-up boxes list the available data sets.

Also on-line are the Gulf of Mexico Inventory Maps, which list data sets in a pdf format searchable by location and collection date.

"When our customers first see how many data sets are in the inventory, it's easy for them to become overwhelmed by questions," says Betzhold. "We've designed the inventory so that users not only learn about the available data sets but also gain access to as much contextual information as we can supply," such as the following:

- Vertical and horizontal accuracy
- Horizontal and vertical datum references (for example, the North American Datum of 1983 and North American Vertical Datum of 1988)
- Data ownership and contact information

- A feature enabling the user to print the map extent displayed on the screen
- Up to 20 attributes posted, to give users a better sense of data set quality

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"I have a nickel and you have a nickel. Let's rub our nickels together and get a quarter!"

*Margaret Davidson, director,
NOAA Coastal Services Center*

.....
Maria Honeycutt recites Davidson's phrase with a laugh. "In the coastal management community we talk about 'leveraging resources' all the time, because it helps us prioritize in an era of dwindling budgets." With that idea in mind, says Honeycutt, people can use the Center's data inventory as a leveraging tool.

"Whenever I attend workshops on coastal hazards or inundation or sea level rise, participants say that their biggest priorities are high-resolution topography and bathymetry, because it helps so much with making decisions," notes Honeycutt. "Knowing that, agencies and stakeholders can use the Center's data inventory as a leveraging tool to locate data that can be used for free, or to find out the data gaps that exist, and then can partner with other agencies to help fill the gaps."

Whatever potential users decide to do with the information, Honeycutt knows that they are in a much better position than she was in 2005. "People who have used the inventory tell me they were able to find the data they needed in 10 minutes, because someone at the Center did the work. So the next time a hurricane hits, they will not have to call up 10 different people to find the right data, like I did."

Get Lidar Data for Your Region . . . IT'S EASY!

You can locate lidar data from every coastal state, numbering more than 120 billion topographic and bathymetric points in all. Here's how:

See www.csc.noaa.gov/lidar/

1. Click **Get It Now** button
2. Click **Download Data** button
3. Search by area or state, or enter coordinates
4. Refine area of interest, if desired
5. Search results will be displayed—view and choose available data sets for download
6. Click **Data Checkout** for final data request

For more information contact Lindy.Betzhold@noaa.gov.

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Coastal Connections is a publication of the National Oceanic and Atmospheric Administration Coastal Services Center, produced for the coastal resource management community. Each issue of this free bimonthly newsletter focuses on a tool, information resource, or methodology of interest to the nation's coastal resource managers.

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NEWS AND NOTES

Portland Is the Site of Conference on Coastal and Estuarine Research

The Coastal and Estuarine Research Federation (CERF) is holding its international conference November 1 to 5 in Portland, Oregon. Conference participants will explore "the important relationships between coastal regions and estuaries over time and spatial scales." For more information, view www.sgmeet.com/cerf2009/theme.htm.

Publication Underscores Adaptation Actions and Unmet Needs

Good Morning America! The Explosive U.S. Awakening to the Need for Adaptation, by Susanne Moser Research and Consulting, examines the nation's public, political, and scientific concerns about climate change adaptation. The report identifies barriers to adaptation planning as well as suggestions for effective future adaptation. The report, sponsored by the California Energy Commission and NOAA Coastal Services Center, is on-line at www.csc.noaa.gov/publications.html.

Oceans 2009 Conference Will Highlight Marine Science and Technology Issues

Members of the marine science, technology, and engineering communities will gather for the Oceans 2009 annual conference, which will take place October 26 to 29 in Biloxi, Mississippi. To learn more, see www.oceans09mtsieebiloxi.org/index.cfm.

Transitions

Christian Miller has joined the Mississippi-Alabama Sea Grant Consortium as an extension specialist for nonpoint source pollution issues. Miller previously served as an extension agent at the Miami-Dade County Extension Service in Florida... Three Pennsylvania Sea Grant employees are staffing a newly opened office in the city of Harrisburg: **Karla Kaczmarek**, a coastal outreach specialist who has worked with Pennsylvania Sea Grant since 2007; **David Boughton**, a marine education specialist and a former employee with the National Park Service; and **Anna McCartney**, an education journalist working for Pennsylvania Sea Grant as a communication specialist for schools and communities.