COASTAL CONNECTIONS

VOLUME 6, ISSUE 3 | A BIMONTHLY PUBLICATION FOCUSED ON TOOLS FOR COASTAL RESOURCE MANAGERS | JUNE/JULY 2008

COASTAL MANAGEMENT PROFILE

Braxton Davis
Director, Science and Policy Division, South Carolina Coastal Zone Management Program

Where you live: Charleston, South Carolina.
Job description: Our division gathers the best available information to help our agency, the South Carolina Department of Health and Environmental Control, develop good short-term decisions and long-term policies.
Family: Wife, Jennifer, and daughter, Allison, who will be two years old in July.
Education: B.A. in environmental sciences, University of Virginia; M.S. in biological sciences, Florida International University; Ph.D. in marine affairs, University of Rhode Island.
Most fulfilling, and challenging, aspect of your job: Honestly, I work with great people who teach me something new every day. My challenge? Like all coastal managers, too many issues and not enough hours in the day.

Continued on Page 2

FOCUS

FIRING UP YOUR GEOSPATIAL TECHNOLOGY SKILLS

Forge a step-by-step approach to find the right training, data, and tools.

By now, nearly every coastal professional has attended a presentation or two where the terms "GPS," "GIS," and "remote sensing" are bandied about. More than likely, the presenters extol the benefits of these geospatial technologies in mapping habitat or land cover, evaluating storm impacts, or crafting large-scale conservation plans.

Participants listening to such presentations are impressed—unfortunately, many of them still don't have a clue how to start using these tools once they return to their workplaces.

The use of geospatial technology tools in coastal resource management has grown significantly in the past decade—but even seasoned users do not always take maximum advantage, a point illustrated by 2007 survey results from the National Association of Counties (NACo).

The survey was given to NACo members in all major coastal regions. Targeted respondents were likely to have more exposure to these technologies than the general population. Several were members of NACo's technology committees, and professional affiliations ranged from geospatial specialists and coastal managers to county employees in environmental engineering and science.

The survey revealed that 45 percent of the 79 respondents do not take full advantage of the geospatial data and tools that are available. Another eight percent would like to use geospatial data and tools to a greater degree but do not know what is available. And nine percent do not know what sorts of geospatial data and tools are in use at their workplaces.

Get Acquainted with the Terminology

How do you start reaping the benefits of geospatial technology when you know little about the topic? First, thumbnail definitions are in order. The three technology systems mentioned below operate independently but can also be used in combination:

Geographic information system (GIS)

This system captures, analyzes, manages, or stores data and information that has spatial references to the earth's surface. GIS can help users locate and manage assets and resources, calculate

Continued on Page 2

Profile continued from Page 1

Personal accomplishment:
My wife and I are celebrating our tenth anniversary this month.

Work-related accomplishment:
In November 2007, I testified on behalf of the Coastal States Organization (CSO) before the U.S. Senate Commerce Committee. As the chair of the CSO's climate-change work group, I wanted to make sure that future climate research addresses the needs of coastal states.

A life-changing song or artist:
As a kid growing up in a non-coastal town, I loved listening to Jimmy Buffett's songs, and they inspired me to pay attention to the coast. So I guess I owe it all to Jimmy!

In his testimony last November to the U.S. Senate Commerce Committee, Braxton Davis emphasized the importance of increasing the geospatial technology capacity of coastal states. "Our state and local governments need continued support for technologies that make possible coastal elevation data and inundation models, as well as other information. Having this information is essential to understanding the impacts of sea-level rise and other aspects of coastal change," he says.

To read the full text of Braxton Davis' remarks to the U.S. Senate Commerce Committee, visit *www.coastalstates.org.*

Focus continued from Page 1

emergency response times, assess environmental impacts, complete scientific studies, and analyze large amounts of map-based data.

Remote sensing

These tools collect information about land and water areas from a distance—for instance, from aircraft, spacecraft, satellites, buoys, or ships. Remote sensing can aid the analysis of land and the marine floor, fisheries habitats, and shoreline erosion.

Global Positioning System (GPS)

This hardware uses satellites and devices to compute various positions on the earth's surface. GPS devices help users determine the locations of specific items in the field, such as protected resources, and can export those features to a GIS analysis.

Investigate Training and Product Features

Next, check out available training courses. The National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center offers eight courses in geospatial technology, which range from an introductory GIS course for nontechnologists to an advanced, hands-on training in coastal inundation mapping. (For course descriptions, see "Geospatial Technology Training Opportunities" on page 3.)

Technology novices can become intimidated by the different training and product choices, not knowing which ones will yield the best results for their coastal circumstances. If this is the case with you, consider taking one of the Center courses flagged as "basic," where you can receive guidance on the matter. "We don't advocate one software package over another, but we can provide information to help organizations weigh their needs against the advantages of different GIS products," says Steve Walker, a GIS training coordinator with the Center.

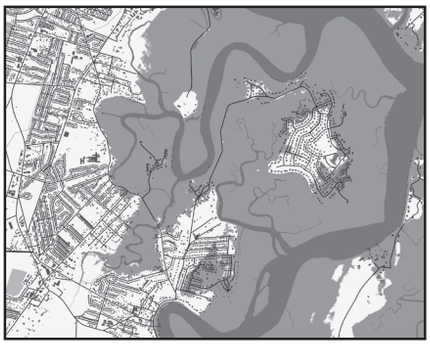
Some Center courses can be brought to your area. "We've found that it makes sense to teach courses 'on the road,'" explains Walker. "Traveling to teach our students makes training affordable for agencies whose travel budgets have been cut in recent years. Also, it's easier for us to be mobile than in the past because quite a few training labs around the country are set up to handle GIS."

An organization seeking to upgrade its geospatial capacity need not purchase every tool, service, and data set. According to Pedro Flores, the GIS outreach director for NACo, organizations often find valuable uses for pre-existing data.

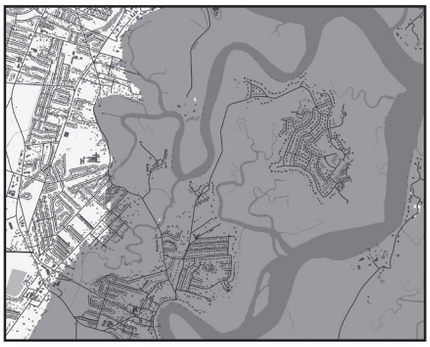
"Some coastal counties have been using GIS for 20 years, so they can take the raw NOAA data and perform high-level analysis," says Flores. "However, counties that are just beginning to use GIS for planning and management purposes usually prefer preprocessed data that isn't too cumbersome to use."

One data resource is the Coastal Change Analysis Program (C-CAP), a Center-led initiative that provides standardized, accurate land cover data for all U.S. coastal areas. A number of programs analyzing land cover issues have used C-CAP data sets rather than starting from scratch, thereby saving hundreds of thousands of dollars.

Another cost-cutting alternative is to seek grant monies for tools and training. "There are several possibilities," notes Walker. "For example, a program established by the software maker



Category 1



Category 2

Users can apply GIS tools to visualize different inundation scenarios, as shown by these hurricane storm-surge maps.

Continued from Page 2

ESRI donates millions of dollars in software, data, books, conference passes, and training to U.S. nonprofits involved in conservation and geospatial issues. Also, NACo awards annual geospatial technology grants to counties involved in coastal restoration projects," says Walker.

Finally, it is wise to forge a relationship with an agency or organization that is more experienced in geospatial applications. "When a county agency is starting out on a GIS mapping project for the first time," says Flores, "I try to hook them up with a county that has already completed a mapping project. That way, the less experienced agency can get good advice and learn which steps to avoid before they begin."

GEOSPATIAL TECHNOLOGY TRAINING OPPORTUNITES

The Basics

GIS for Managers

This four-hour course covers geographic information system (GIS) basics through hands-on computer training. Participants will gain a better understanding of the power, and limitations, of this technology.

Assessing GIS for Your Organization

Not for the technologist, this lecture-driven course is designed for the coastal manager interested in an overview of GIS fundamentals, including software, hardware, data, required expertise, and applied uses.

Conservation Data Documentation

This three-hour, hands-on workshop gives conservation practitioners the information and tools needed to document spatial data in a GIS environment.

Beginners

Introduction to ArcGIS I

This course will introduce the student to GIS basics and applications to coastal resource management issues. Topics covered are basic GIS theory and concepts, spatial data creation and management, and analysis and geoprocessing, as well as cartography.

Intermediate

Coastal Applications Using ArcGIS

This course provides students with opportunities to address a variety of coastal issues using ArcView 9x technology. Students will become familiar with metadata, map scale issues, and data formats, applying this technology to real-world coastal issues.

Remote Sensing for Spatial Analysts

Students will use remote sensing to investigate issues such as land use, shoreline erosion, and fisheries and benthic habitat assessment. Students should gain a mastery of basic GIS skills before attending this class. All hands-on GIS exercises will utilize ArcGIS software.

Advanced Topics

GIS Tools for Strategic Conservation Planning

Participants will use ArcView 9x and Spatial Analyst software, with data sets from coastal areas, to apply principles of green infrastructure network design and address realistic conservation scenarios using GIS.

Coastal Inundation Mapping

Course participants will learn to apply inundation data for state and local planning efforts. In the GIS portion of the course, participants will use topographic and water-level data to perform vertical and horizontal transformations, create digital elevation models, map inundation areas, and compare inundation mapping methods.

Some Center courses can be brought to your area. To learn more about training opportunities, visit *www.csc.noaa.gov/training/*.

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.

Please send us your questions and suggestions for future editions. To subscribe or contribute to the newsletter, contact our editors at

Coastal Connections
NOAA Coastal Services Center
2234 South Hobson Avenue
Charleston, South Carolina 29405
(843) 740-1200
CoastalConnections@noaa.gov
www.csc.noaa.gov/newsletter/

Editor:
Kitty Fahey

Communications Director:
Donna McCaskill

Current Events Editor:
Hanna Goss

Copy Editor:
Gerald Esch

Graphic Designer:
Frank Ruopoli

NOAA/CSC/CC 08-6-3

This paper is made with 100% recycled fiber and contains at least 25% post-consumer waste.

NEWS AND NOTES

Florida Meeting Tackles Species Conservation and Climate Change

On August 20 to 22, "Florida's Wildlife: On the Frontline of Climate Change" will take place in Orlando, Florida. It will highlight methods for optimizing species conservation that will be considered for inclusion in Florida's climate change strategy. For more information, visit *www.ces.fau.edu/floc/*.

Deadline Approaches for Coastal Wetlands Grants

The National Coastal Wetlands Conservation Grant Program provides matching grants of up to $1 million for acquisition, restoration, management, or enhancement of coastal wetlands. Proposals must be submitted by June 27, 2008. To learn more, view "Breaking News" at *www.fws.gov/coastal/CoastalGrants/*.

Michigan the Site of Submerged Lands Conference

On October 26 to 29, the Great Lakes Commission will host the 27th Annual International Submerged Lands Management Conference. Abstracts are due July 1. The conference will highlight managers' current successes and challenges concerning the public trust doctrine, energy facility siting, underwater preserves, and many other topics. More information is available at *www.submergedlands2008.com*.

In Sympathy

We extend our condolences to the family and friends of Rusty Mason, who perished while diving as part of a surveying mission in the Tortugas South Ecological Reserve. Rusty Mason was employed as a marine mechanic for the Florida Department of Environmental Protection's Office of Coastal and Aquatic Managed Areas. He logged thousands of dives protecting the special places he loved. Donations can be made to the Rusty Mason Memorial Fund, care of the Sanctuary Friends Foundation of the Florida Keys. For more information, e-mail *info@sanctuaryfriends.org*.

Transitions

Kimberly Cole has been named manager of the Delaware National Estuarine Research Reserve. She previously worked as an environmental scientist for the Delaware Coastal Management Program… **James W. Balsiger**, former regional administrator for NOAA's National Marine Fisheries Service, has been appointed the agency's acting director.

NOAA Coastal Services Center
2234 South Hobson Avenue
Charleston, South Carolina 29405

PRST STD
POSTAGE & FEES PAID
NOAA COASTAL
SERVICES CENTER
PERMIT NO. G-19