COASTAL SERVICES

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LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

A Room with a View?
Dunes vs. View in New Jersey

Taking On Mother Nature in Hawaii

EstuaryLive Coming Soon to a Computer Near You

From the Director

If the dunes from a beach nourishment project block your ocean view, should you be compensated? In this edition of *Coastal Services*, we examine a New Jersey court case that has a growing number of beachfront property owners in that state debating ocean views versus dunes and a sandy beach.

While there is disagreement among attorneys as to what the implications of the New Jersey Superior Court decision actually are, it is the first New Jersey court case to expressly address the question of whether the loss of ocean view and access are elements for which severance damages may be awarded.

Also in this edition, we highlight Hawaii's efforts to help residents and communities prepare for the forces of Mother Nature. Hawaii began its coordinated effort two years before the federal government began requiring all states and communities to develop and adopt hazard mitigation plans in order to qualify for mitigation grant money and certain types of disaster assistance.

In addition to learning from Hawaii's experience, states and communities working to reduce their environmental, social, and economic impacts from coastal hazards may be interested in new tools and techniques offered by the National Oceanic and Atmospheric Administration's (NOAA) Coastal Services Center.

These include:

- **Community Vulnerability Assessment Tool: New Hanover County, North Carolina**—a methodology that helps states and communities meet the Federal Emergency Management Agency's (FEMA) requirements to develop hazard mitigation plans and prioritize mitigation strategies. It also helps officials determine hazard vulnerabilities. *www.csc.noaa.gov/products/nchaz/startup.htm*
- **Historical Hurricane Tracks**—a Web site that allows coastal managers to search and display 150 years of Atlantic Basin tropical cyclone data. *http://hurricane.csc.noaa.gov/hurricanes/*
- **Flood Forecast Mapping, Tar River Basin, North Carolina**—a demonstration project showcasing maps that the National Weather Service will use to help communities better prepare for potential flood conditions. *www.csc.noaa.gov/ncflood/*

To learn more about how the NOAA Coastal Services Center can help states and communities prepare for natural hazards, point your browser to *www.csc.noaa.gov/themes/coasthaz/*.

Margaret A. Davidson

The mission of the NOAA Coastal Services Center is to support the environmental, social, and economic well being of the coast by linking people, information, and technology.

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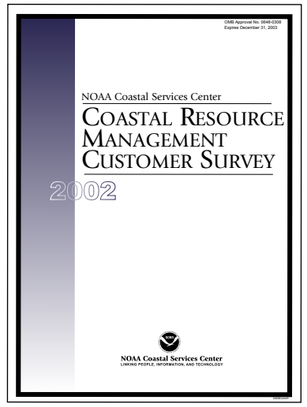
News and Notes:

National Coastal Resource Managers' Survey Results

Every three years the National Oceanic and Atmospheric Administration's (NOAA) Coastal Services Center conducts a comprehensive customer survey, the results of which are used to hone Center services and products. For the 2002 effort, over 400 individuals completed the survey with an overall office response rate of 74 percent.



The following information summarizes some of the survey's results.

A variety of technology-based tools are becoming nearly commonplace for the coastal resource management community.

It wasn't that long ago that geographic information systems (GIS) were the new kids on the technology block. The initial promise of this technology seems to have been realized, as 92 percent of respondents indicated their offices use GIS. The same can be said of the Internet since nearly all respondents (99 percent) reported having Internet access.

There is a dramatic increase in the number of offices investing in remote sensing technology. While only a third of the respondents classify themselves as "familiar" with remote sensing, in the last three years, the percentage of offices that have one to two staff members using remote sensing has nearly doubled. Furthermore, respondents said they expect the use of remote sensing and other technologies, including on-line information search tools and visualization tools, to see continued growth.

Despite the increased use of technology, there is a need to improve the way technical tools and information are used.

One of the primary attributes that makes GIS useful is its ability to help decision makers "see" the various components of a scenario or issue. This visualization capability also is helpful for outreach and education professionals, but only a quarter of these respondents know the details of their offices' GIS use.

Although 70 percent of respondents believe that increased access to information and technology will be a high priority in the next three years, nearly half of the respondents indicate that they never make spatial data available to the public or do not know if they make this data available.

Spatial data are frequently used to address high-priority issues.

Offices currently use spatial data to address the issue rated as their highest—habitat restoration and monitoring. Other high-priority issues where spatial data are used include land use planning and growth management, watershed planning, water quality monitoring, and nonpoint source pollution. Three quarters of the respondents indicate their offices use shoreline spatial data.

Even in this information age, face-to-face communication is the preferred way to get information.

Over 90 percent say talking with colleagues and friends and attending professional meetings, conferences, workshops, and trainings are the most frequent ways they share new ideas and information. The majority of respondents find talking with colleagues and friends to be the most useful.

There is a need for additional training courses.

Training opportunities always rank high on the coastal resource manager's wish list. This year, leadership in coastal management and performance measures are two topics that people ranked highly. Survey respondents also classified themselves as unfamiliar with needs assessments, surveys, interviewing, group data collection, resource valuation, and cultural, historic, and heritage resource management. Not surprisingly, it was found that people are more likely to participate in training if little travel is involved.

Coastal zone management is a dynamic field.

Fifty percent of respondents have been in this field for over 15 years, but 42 percent have been in their current positions for five years or less. ❖

To see additional survey results, please visit www.csc.noaa.gov/survey/.

Hazards Mitigation:

Hawaii Takes On Mother Nature

Preparing communities to identify and minimize the potential impacts of hurricanes, earthquakes, or other natural disasters has gone from being just a good idea to being a federal requirement. Even before hazard mitigation planning became the rule, Hawaii had a coordinated effort under way to help residents and communities prepare for the forces of Mother Nature.

Because of the islands' vulnerability to a variety of natural disasters, the Hawaii Hazard Mitigation Forum was formed in 1998 to raise public awareness, coordinate and prioritize state mitigation activities, and advise the director and vice director of Hawaii's Civil Defense.

Since its creation, the group's diverse membership has launched a $500,000 public education campaign, and is helping the counties and state to draft disaster mitigation plans and perform risk assessments. The forum's efforts are being used as a model in the region and around the country.

In the Beginning

The list of hazards to which Hawaii is vulnerable is lengthy. Hurricanes, tsunamis, floods, earthquakes, volcanic eruptions, wildfires, drought, and landslides have all impacted the islands at one time or another.

An advertising executive donated his time and provided the campaign theme of Mother Nature and her professional-wrestling sons Hurricane, Flash Flood, Earthquake, and Tsunami.

"We always say it's not a matter of if, it's a matter of when" the state will face one of these hazards, says Larry Kanda, hazard mitigation officer for Hawaii's Civil Defense Division.

While the forum's work will hopefully save property, and even lives, when the next disaster does strike, Kanda says he had a "selfish reason" for helping to create it.

"I was the only designated mitigation planner in Civil Defense when I was hired in 1992," he says. "There were a lot of activities going on at the time and they were not well coordinated. My basic thought was to get a group together to figure out what was happening in the state so we could better utilize our resources and do smart mitigation projects."

He says the idea took root after discussions he had in 1996 with Mike Hamnett, director of the Social Science Research Institute at the University of Hawaii. "We toyed with the idea of how to establish the forum. We didn't want an ad hoc group or a formal group that was established by law because that would get in the political realm."

Instead, the Civil Defense Division sent letters to everyone in the state who was involved in mitigation activities, including Hawaii's Coastal Zone Management Program, and asked them to participate. The group's bylaws were written by its 17 members, who represent county, state, and federal government, academia, and private industry.

Forum committees tackle projects, such as conducting a risk and vulnerability analysis, as well as addressing specific hazards to ensure all mitigation and planning possibilities are recognized.

Forum committees can be made up of nonmembers, which eliminates any knowledge or technical gaps that might exist.

"It brings to the table a whole host of people that have experience in mitigation and have helped us come up with a complete strategy on how to deal with natural hazards," Kanda says.

The forum meets formally four times a year, but committees typically meet every two weeks.

The Big Match

The forum's first project was to develop a comprehensive public education and awareness campaign.

While some funding for the campaign was provided by the Coastal Zone Management Program, the Federal Emergency Management Agency (FEMA), the Civil Defense Division, and others, the majority of the estimated $500,000 project was donated services and resources.

An advertising executive donated his time and provided the campaign theme of Mother Nature and her professional-wrestling sons Hurricane, Flash Flood, Earthquake, and Tsunami. Private support enabled the forum to produce and air radio and television public service announcements featuring professional actors, and to print and distribute brochures, posters, newspaper inserts, and counter cards. University graduate students created a Web site for people to turn to for more information.

A follow-up survey of residents showed that 74 percent could name something they could do to reduce the risk of their house being damaged by a natural disaster.

Preparing for the Worst

Another of the forum's primary missions has been developing mitigation plans for the state and its four counties. This was fortuitous because in 2000, the U.S. Congress instructed FEMA to issue new planning requirements that states and communities have to meet in order to qualify for mitigation grant money and certain types of disaster assistance.

"From the very beginning, before FEMA came out with its requirements, I knew we had to complete a state strategy and help the counties do the same," Kanda says. "The forum's planning committee took on the responsibility."

FEMA's deadline for the completion of state and local mitigation plans is November 1, 2004, for post-disaster assistance. In the Pre-Disaster Mitigation Program, county mitigation plans will be required as a condition for "brick and mortar" project grants after November 1, 2003.

The forum has funneled funding, technical assistance, and training and workshops to local governments and businesses to help the counties develop their mitigation plans.

Kanda says drafts of the county plans were to be complete by July 15. The state's mitigation plan is being "written around the county plans," and a draft is expected to be complete by September 15.

In addition to prioritizing the mitigation projects for the state, the forum is conducting a risk and vulnerability analysis using a geographic information system (GIS).

Expecting the Best

One of the best and most unexpected results of the forum, says Chris Chung, manager for the Hawaii Coastal Zone Management Program, is the "bridging of the gap between science, and resource and emergency managers."

"Collaboration, coordination, outreach—that's success. The forum is a great tool to have in accomplishing all of those things," Chung says.

The forum's success has caught the attention of other states and territories as well. Members of the forum are helping other islands in the region prepare mitigation plans, and states across the country have requested information and assistance.

While proud of the group's progress, Kanda still considers it "a project in the making."

"We formed this for the partnerships and to develop a smart approach to address our [hazards] issues and problems," he says. "We're continuing to learn things and want to expand. . . Partnering never ends." ❖

For more information on Hawaii's Hazard Mitigation Forum, point your browser to www.mothernature-hawaii.com. You may also contact Larry Kanda at (808) 733-4301, ext. 550, or lkanda@scd.state.hi.us; Mike Hamnett at (808) 956-7459 or hamnett@hawaii.edu; or Chris Chung at (808) 587-2820 or cchung@dbedt.hawaii.gov. For more information on FEMA's hazard mitigation requirements, go to www.fema.gov.

Photos courtesy of Hawaii Civil Defense

A Room with a View?

Dunes vs. View in New Jersey

The award of $37,001 plus interest to a New Jersey beachfront property owner whose property was impacted by a beach nourishment project is raising questions in that state about the value of an ocean view. While there is disagreement among attorneys as to what the implications of the New Jersey Superior Court decision actually are, a growing number of the state's property owners are weighing in on the importance of an ocean view versus dunes and a sandy beach.

At the center of the debate is a 1993 dune construction project along seven miles of beachfront in Ocean City, New Jersey. When the property owner, Louis Spadaccino, refused the $1 the city was offering to purchase an easement across his land for the project, Ocean City instituted a condemnation action for the easement.

"As a result of the dune project, the view of the ocean from the Spadaccino's [first-floor] condominium has been completely obstructed and direct access to the beach has been eliminated," writes the Superior Court of New Jersey Appellate Division in its opinion supporting a jury's decision to award the homeowner $1 for the easement and $37,000 in severance damages.

Whether the loss of view and direct access to the beach were the primary reasons for compensation is debated among the parties involved; however, property owners in at least one New Jersey community have since challenged a proposed beach nourishment project over concerns about the impact on their views.

No prior New Jersey case expressly addressed the question of whether the loss of ocean view and access are elements for which severance damages may be awarded.

Point, Counterpoint

The case, state coastal resource managers say, does not generate any new legal concerns that could impede future beach nourishment projects. The problem, they say, is that some beachfront property owners have the "perception" that it has.

"It does not create a general entitlement to compensation for views diminished from shore protection projects," says Bradley Campbell, commissioner for the New Jersey Department of Environmental Protection. "It has generated expectations among some property owners and communities, who are certain to be disappointed when projects proceed and compensation is not forthcoming."

While the loss of view and access were considered by the court, the "real loss of value that the court felt should be compensated" was caused when the easement and dune "severed" the property, which Spadaccino owned down to the water line, Campbell says.

"It wasn't just the view," says Ruth Ehinger, manager of the New Jersey Coastal Management Office. "Their property was cut in half by the dune."

Gerald Corcoran, the attorney representing Ocean City, sees the case a little differently. "The legal question," he says "is whether or not someone who alleges loss of view and direct access to the beach is entitled to recover from those alleged damages. We argued they shouldn't be because the public interest of the beach replenishment project outweighed the local and personal loss of view, which were not significant. We lost."

> At the center of the debate is a 1993 dune construction project along seven miles of beachfront in Ocean City, New Jersey.

He adds, "Certainly in New Jersey it demonstrates that if you have beachfront property, you may be entitled to recover severance damages for loss of view and access. This is a consideration governments should be aware of."

Kenneth Porro, an attorney representing Spadaccino, agrees that communities need to be aware of the case, but citing an expert who testified during the jury trial, he disputes the protection that dunes are reputed to provide to homes and businesses during severe storms. "People still believe dunes protect your property from flooding. They do not, according to our expert," he says.

But while other property owners "want to jump on the bandwagon" to protect their views, Porro says the only cases he believes will be successful will be those filed by property owners who, like Spadaccino, have riparian rights down to the waterline.

Eye of the Beholder

Whatever legal ramifications the case may or may not have, Spadaccino says that for him the loss of view was the issue.

"It was 1,000 percent about the loss of view," says Spadaccino, whose primary residence is in Pennsylvania. "I didn't want the money. I wanted my view back."

The view, he says, was the reason he and his wife purchased the first floor of an older, two-story duplex that had little elevation. "It was gorgeous. It had a deck in the back and a bulkhead, and you walked down four or five steps onto the beach and to the water." Spadaccino notes that this ease of access was important because his wife could no longer negotiate stairs well.

Five years after purchasing the property, Spadaccino says the city notified him of the beach nourishment project. Concerned about the impact the dunes would have, he contacted several neighbors about taking the city to court. "They all said, 'Lou, you can't fight city hall.' Nobody wanted to join in."

Spadaccino pursued the case on his own.

Public Benefit

The replenishment project was necessary, says Ocean City's attorney, Corcoran, because of long-term erosion problems. Severe storms in 1991 and 1992 washed away portions of the community's boardwalk, and damaged businesses and homes.

"Now there's a big dune in front of those homes, and they have more protection," Corcoran says. "What you have to ask is not what the individual property owner wants, but what is in the public interest… What's more important, a person having a view or protection of property? That's the philosophical question. I know where I come down."

"I never had a problem" with flooding or erosion, Spadaccino says. "Should I compensate the people up there who did?"

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Bringing in the Sand

To undertake the city's first public beach nourishment project in at least 30 years, the U.S. Army Corps of Engineers and state Department of Environmental Protection required the city to either obtain the title or easement to about 200 parcels of land where sand and dunes would be placed. An appraiser determined the easements were worth $1.

The city was "very successful" at securing the easements with only 10 to 15 people refusing. In those cases, the city exercised its right of eminent domain and condemned the easements for the sand and dune system, but did not take any other property rights away. Corcoran explains, "When all is said and done, the property owner continues to own the area and we just have an easement."

All but one case was settled during the condemnation hearings. Spadaccino took his complaint to the New Jersey Superior Court.

In the Courtroom

In the suit, the Spadaccinos "claimed that the easement damaged the remaining part of their property and diminished its market value by $100,000," writes the Superior Court Appellate Division.

In a case of dueling experts, court documents note, the jury heard from the city's real estate appraiser that "beach view and access rights have no value," and that "loss of riparian rights did not devalue the property."

A real estate expert testifying on behalf of Spadaccino determined the loss of value on "four things: loss of view, loss of direct beach access, loss of use, and loss of privacy." He assigned the loss of view at 60 percent of the lost value, loss of access at 20 percent, and the loss of use and loss of privacy at 10 percent each.

The jury ruled in favor of Spadaccino. Ocean City appealed the case to the New Jersey Superior Court Appellate Division and lost. The court writes in its opinion that the "loss of ocean view and access are elements for which severance may be awarded. While no New Jersey case has had occasion to render such a ruling, the application of the standards governing partial takings leads inevitably to this conclusion."

The Aftermath

"We were very fortunate," says Corcoran. "In Ocean City, we acquired an awful lot of beach that was in private ownership that is now in public ownership. We don't have to repeat this process."

He adds, "When you look at the big picture, we paid one property owner $37,001. We were pretty successful."

In other communities, some residents may be less willing to accept beach nourishment projects.

"There has been an increasing tendency for a minority of property owners in a community to oppose shore protection projects largely on the basis that dune accretion, which is one of the essential benefits of a shore protection project, interferes with their views," acknowledges Bradley Campbell.

Residents in one New Jersey community were so concerned about the loss of views that might be caused by a nourishment project that they recently held a referendum to vote on the issue. "Those who wanted shore protection prevailed and that project is proceeding," says Campbell.

He adds, "Over the long term we're hoping property owners will see the practical value and the aesthetic value of a dune view as much as an ocean view."

"People don't want dunes" says Kenneth Porro. "The perception is that these walls of sand protect us, and what they really do is just replenish the beach. . . These people would rather have water up to their bulkhead than have dunes."

Spadaccino says he uses his beach property much less than he did before the nourishment project, and feels the jury should have awarded him more money for his loss of view and access. In the end, however, he's just "glad it's over. I had enough of it." ❖

To read the Superior Court of New Jersey Appellate Division's opinion in the case, point your browser to http://lawlibrary.rutgers.edu/courts/appellate/a5224-97.opn.html. You may also contact Ruth Ehinger at (609) 292-2662 or Ruth.Ehinger@dep.state.nj.us, or Gerald Corcoran at (609) 645-2201 or gcorcoran@yclegal.com. Kenneth Porro can be reached at (201) 531-

Before—The view from the Spadaccino's deck in 1990. Steps led directly to the beach.

After—The view after the 1993 dune construction project. Access to the beach is now about 80 feet away.

Photos courtesy of Louis Spadaccino

Pennsylvania Puts Eyes in the Sky to Detect Violations

Environmental enforcement officers in Pennsylvania are taking to the sky to detect violations and monitor permitted projects. Getting this bird's-eye view, coastal managers say, can be more effective than on-the-ground monitoring, and saves time and money.

"It's really been quite successful for me," says Alex Page, solid waste specialist for Pennsylvania's Department of Environmental Protection. "I've found things that I never would have found in a car."

Pennsylvania's Coastal Zone Management Program has been conducting the overflight program since the early 80s. "We're a networked program, so we don't have any enforcement authority. The next best thing is to provide enforcement tools to the different enforcement agencies on which we rely," notes Larry Toth, a coastal planner for the coastal program.

Over several days in the spring and fall, the coastal program takes enforcement staff from local, state, and federal agencies up in a helicopter where they can take photographs. The flights alternate annually between Lake Erie and the Delaware Estuary coastal zones.

During the flights, enforcement staff are trying to detect violations that might impact wetlands or water quality, as well as the processing and disposing of solid waste. They also monitor wetlands mitigation, the cleanup of brownfield industrial sites, and adherence to permit conditions.

Unexpected problems are often detected. Page recalls being startled one flight to see a large plume in the Delaware River that turned out to be raw sewage from a malfunctioning treatment plant. "If we had been standing on the ground looking at the water surface, we would never have seen it."

The participants also use the overflights to develop a photographic history of problem sites. The photos are "very valuable tools in court," Page notes. "They are extremely effective at showing the true conditions of a site that is hard to rebut."

Before an overflight, Toth sends participants a map to mark specific sites they want to fly over. A general flight path is created from the combined information. The timing of the overflights takes into account potential interference, such as leaf cover and tide levels. Three or four enforcement officers go up at a time, and flights may last anywhere from 45 minutes to three hours. About eight flights are flown over two to three days.

> **"Even if each participant only picks up one or two violations per flight, they're still looking at 20 or 30 sites in total."**
>
> **Larry Toth, Pennsylvania's Coastal Zone Management Program**

After the flights, the coastal program requests that participants give them a listing of all the sites that were looked at, and the violations that were found. Six months later, participants send the coastal program a brief update on what has been done to resolve the violations.

Toth uses the information to develop a chart and report, which are sent to all the participants and their supervisors, as well as the secretary of the state Department of Environmental Protection.

Toth says the program is working. "Even if each participant only picks up one or two violations per flight, they're still looking at 20 or 30 sites in total. It's cost effective and we're getting a lot of information out of it." He notes that it allows enforcement officers to monitor many sites in a short period of time and to see sites that are normally inaccessible to them. It also promotes interagency cooperation and communication.

"It does make a difference," he says. "It's a unique tool for the enforcement people to use." ❖

For more information on Pennsylvania's overflight program, contact Larry Toth at (717) 772-5622 or latoth@state.pa.us.

Photo by Jonathon Bower and courtesy of Pennsylvania Department of Environmental Protection

A pile of tires hidden by trees was discovered in the Delaware Estuary coastal zone during a recent flight.

Coming Soon to a Computer Near You, EstuaryLive!

Students in New Zealand are taking regular field trips to a North Carolina research reserve. So are students from Canada, Venezuela, and around the U.S. How are they doing it? It's as simple as logging on to the Internet.

"It's the next best thing to being there," says Susan Lovelace, former education coordinator for the North Carolina National Estuarine Research Reserve. "We have students in the field who act as the eyes, hands, ears, and fingers of the folks back in the classrooms."

The program has worked so successfully as an education tool for North Carolina that the National Estuarine Research Reserve System has expanded the idea.

EstuaryLive is an interactive, real-time Internet field trip to a remote North Carolina estuary each spring and fall. A camera crew follows naturalists and student guides as they explore sand dunes, tidal flats, dredge spoil areas, and maritime forests, and answer the questions of the children sitting in classrooms hundreds and even thousands of miles away.

The program has worked so successfully as an education tool for North Carolina that the National Estuarine Research Reserve System has expanded the idea, and for the past three years has produced Internet field trips to reserves around the country to celebrate National Estuaries Day. Eight EstuaryLive field trips are scheduled this year for September 25 and 26.

"The national program estimates that 88,000 students participated last year," notes Lovelace. "Each year it's gotten bigger."

It was in 1998 that the North Carolina reserve decided to use the Internet to bring the estuary to students rather than bring more students to the estuary.

Lovelace says they needed the alternative because the reserve was receiving twice as many requests for field trips as it had staff to fulfill. There also was concern about the potential environmental impacts of large groups of students traipsing through pristine areas.

"Technology looked like the thing that could solve all of these problems," she says.

The first year, "the technology used was pretty basic," Lovelace recalls. Microwaves were used to project several images per second from the remote island where filming was taking place. Someone in an office was typing the narration and answers to e-mail questions.

Every year, Lovelace says, the technology and production values have improved. Both video and audio are now sent using higher powered microwaves or satellites. Students still e-mail their questions in, but they are now answered live from the field.

North Carolina's EstuaryLive is filmed over three or four days twice a year, with about 2,000 students tuning in. Different sessions are geared toward different grade levels. A session filmed at night is produced live with an international student audience, and is available for other audiences to download.

A survey completed in 1999 showed that 85 percent of the teachers responding used EstuaryLive as part of their curriculum. In 2001, the program was expanded by the national reserve system, and in 2002 Lovelace and her co-producer Bill Lovin of Marine Grafics, Inc., were finalists for an international award from the Tech Museum in San Jose, California.

"Between staffing problems and schools not being able to take field trips like they used to, this has really solved a large stumbling block for us," Lovelace says. "It's a good program. It's nice when you have something that you hope will do certain things, and it turns out that it does." ❖

For more information on North Carolina's EstuaryLive, point your browser to www.estuarylive.org. For information on National Estuaries Day, go to www.estuaries.gov. You may also contact the North Carolina National Estuarine Research Reserve education office at frontdesk@ncnerr.org.

Photo courtesy of North Carolina Estuarine Research Reserve

A camera crew follows Susan Lovelace (Center) and one of the student hosts during a recent EstuaryLive broadcast.

Ideas for the Next Issue

Human pathogens in coastal runoff, mosquito control efforts stepped up to halt the spread of the West Nile virus in wildlife, the medical use of coastal resources, such as horseshoe crabs—how are coastal resource managers addressing emerging issues such as these? What are some of the other coastal management challenges on the horizon?

To keep the stories in *Coastal Services* relevant and of interest, our writers rely on you to let us know the topics that are on your mind, whether it's searching for a solution to a problem or sharing the success of a program or project.

Have you found an article in *Coastal Services* particularly helpful, or think we missed the mark? We also rely on that kind of feedback to ensure we are keeping up with your expectations and needs.

Coastal Services is *your* trade journal. Please contact us with comments and ideas so that we can continue to provide information that helps our nation's coastal resource managers address coastal issues and challenges.

Contact Hanna Goss via e-mail at Hanna.Goss@noaa.gov, or by mail at 2234 South Hobson Avenue, Charleston, SC 29405-2413. You may also contact her by phone at (843) 740-1332, or fax at (843) 740-1313. To read past editions of Coastal Services, point your browser to www.csc.noaa.gov/magazine/.

It's Back to School Time!

Information Survival Skills

Information Technology

Public Issues and Conflict Management

Metadata

Collaborative Processes

ArcGIS

Managing Hazards

Remote Sensing for Spatial Analysts

Needs Assessments

GIS for Managers

ArcView

The new ArcGIS training schedule is posted at
www.csc.noaa.gov/training/gis.html

Additional course descriptions can be found at
www.csc.noaa.gov/training/

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