

COASTAL SERVICES

VOLUME 10, ISSUE 4 • JULY/AUGUST 2007

LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

BALLAST WATER: Michigan Takes On the Law

Mapping and Removing Abandoned and Sunken Vessels in Georgia

Using Purchasing Power to Protect Lands in Puerto Rico



FROM THE DIRECTOR

Great Lakes coastal resource managers and scientists are addressing a new aquatic invasive species—VHS, or viral hemorrhagic septicemia—a disease that causes fish to bleed to death internally, causing high mortality and severe economic consequences.

This is just one of the latest in a series of invasive fish, plants, pollutants, parasites, and viruses that has been introduced into our nation's coastal waters through ballast water or some other avenue.

With the threat of VHS at their door—and the specter of the next invader's potential environmental and economic consequences—it is understandable that Michigan officials have grown impatient for a solution.

The cover story for this edition of *Coastal Services* focuses on a new Michigan law that pushes that state's authority in managing ballast water from oceangoing ships.

While observers question how long the law will hold and note the pending release of new Coast Guard performance standards for the quality of discharged ballast water, the state's ultimate goal of bringing attention to an important national—and international—issue has been achieved.

Other articles in this edition cover efforts to address derelict and sunken vessels in Georgia, a Maryland Web portal focused on coastal hazards,

and Puerto Rico's coordinated program to protect more than 100,000 acres over the next 10 years.

No matter the issue you are addressing—invasive species, coastal hazards, ecosystem-based management, habitat restoration, or climate change—you will find the best and latest solutions to these issues and more at Coastal Zone 07 (CZ07).

This biennial conference, being held from July 22 to 26 in Portland, Oregon, is the largest and most diverse international gathering of ocean and coastal management professionals in the world.

According to customer surveys conducted by the National Oceanic and Atmospheric Administration's Coastal Services Center, coastal managers highly value getting information directly from their colleagues.

With nearly 1,000 people attending and a focus on integrated coastal and ocean management, there will be no better time or place than CZ07 to network with those who are engaged in the critical work of creating local coastal solutions.

Register to attend at www.csc.noaa.gov/cz/registration.html. I hope to see you there.



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.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Coastal Services Center

National Oceanic and Atmospheric Administration

U.S. Secretary of Commerce
Carlos M. Gutierrez

Under Secretary of Commerce for
Oceans and Atmosphere, and
Administrator, National Oceanic
and Atmospheric Administration (NOAA)
Conrad C. Lautenbacher Jr.
Vice Admiral, U.S. Navy (Ret.)

Assistant Administrator for
Ocean Services and
Coastal Zone Management,
National Ocean Service
John H. Dunnigan

NOAA Coastal Services Center
Director: Margaret A. Davidson

Deputy Director: Jeff Payne

Coastal Geospatial Services,
Branch Chief: Nicholas Schmidt

Coastal Information and Application
Services, Branch Chief: Tony LaVoi

Management and Budget,
Branch Chief: Paul Scholz

Regional Services,
Branch Chief: Bill Thomas

Coastal Management Services,
Branch Chief: Ginger Hinchcliff

Communications Director:
Donna McCaskill

Magazine Writer and Editor:
Hanna Goss

Copy Editor: Gerald Esch

Graphic Designer: Frank Ruopoli

Back issues of *Coastal Services* can be
viewed at www.csc.noaa.gov/magazine/

To subscribe to *Coastal Services*,
please direct correspondence to:

Hanna Goss
NOAA Coastal Services Center
2234 South Hobson Avenue
Charleston, SC 29405-2413
Phone: (843) 740-1332
Fax: (843) 740-1313
E-mail: Hanna.Goss@noaa.gov

For more information about
the Coastal Services Center, call
(843) 740-1200 or visit our
home page on the Internet:
www.csc.noaa.gov

NOAA/CSC/20704-PUB

Coastal Services is produced bimonthly as a
trade journal for coastal resource managers.
Editorial content is unofficial and not
authority for action. Views and opinions
expressed may not reflect those of the
Department of Commerce or NOAA.

NEWS AND NOTES

Usability Testing for Websites

How easy is your website to use? An organizational structure that might make perfect sense to the Web team might baffle a large percentage of the site's users. For an objective opinion, people outside of the organization should be recruited to review the site for usability issues. Fortunately, this type of testing does not have to be complicated or expensive. The following tips originated from Steve Krug, author of *Don't Make Me Think: A Common Sense Approach for Web Usability*.

- 1. The size of the audience sample doesn't have to be large.** The good news is that, unlike surveys, a statistically representative sample is not necessary to get good, usable information. In fact, interviewing just three or four people might be all that is needed, since most of the time the results are the same if 100 or 10 testers are used—what works well on the site works, and what doesn't is usually frustrating for most visitors.
- 2. Testers don't have to be members of your target audience.** Usability testing gets at the intuitive nature of your site. Having members of the target audience test the site is great but not necessary. It is suggested that people participating in the testing do so alone (as opposed to in a focus-group setting), that testing be performed once per month, and that different people be used each time.
- 3. The goal is to get testers to use the site and have them talk to you while doing so.** Written surveys aren't recommended. Talk to the testers before they begin, asking questions such as how often they use the Internet and what their favorite sites are. This will tell you about how comfortable

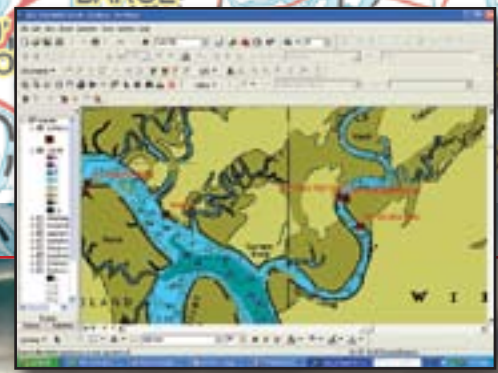
respondents are using the Web, establishes that you are in the listening mode, and gets participants accustomed to talking about their thoughts.

- 4. Start by having respondents talk about your site's front page.** What do they think the main focus of this site is? What do they see as the most important components of the site? The crucial tasks? Pay attention to where your respondents travel first and what they say. The responses should line up with what the organization has determined are the site's most important components.
- 5. Ask respondents to find something on the site or use one of its components.** Don't make this a difficult task, since the goal is to see how easy the site is to use, not to stump the testers.
- 6. Have as many people as possible see the test.** It is amazing how obvious and prevalent some problems can be to everyone except management and the people responsible for the site. Don't write a long report. Actually seeing a few usability tests is much more powerful.
- 7. Pick the worst two or three problems to fix first.** It's too easy to go after the low-hanging fruit and put off tackling the tough tasks. Decide what the biggest problems are and put your energies there. And don't overfix the problem. Often the simple fixes are the best.

To give feedback on the National Oceanic and Atmospheric Administration Coastal Services Center's website (www.csc.noaa.gov), please contact Sean Ryan at Sean.Ryan@noaa.gov.



MAPPING AND REMOVING Abandoned and Sunken Vessels in Georgia



When vessels sink or are abandoned in coastal waterways, they can result in marine debris, threaten navigation and fishing, and have environmental impacts. Many boats sit for years—or even decades—and if cleanup or removal is undertaken, it is often state and territorial governments left holding the bill.

“Kids were playing on it, its nets were still out, and it posed a real danger to safety and health, and navigation.”

Charles “Buck” Bennett,
Georgia Coastal
Resources Division

The Georgia Department of Natural Resources (DNR) is leading the effort in that state to inventory and prioritize abandoned and derelict vessels using a geographic information system (GIS), and has developed an ArcIMS application-based website to keep the boating public informed of these coastal hazards.

“What scares me the most,” says Charles “Buck” Bennett, compliance and enforcement manager for the Coastal Resources Division of the Georgia DNR, “are the shrimping vessels. Their debris often floats about two feet below the surface

of the water, and you could hit it running full throttle in the middle of the channel and not know it’s there.”

Ten dangerous vessels along Georgia’s coast have been removed, and there are plans to get rid of more of the 102 vessels documented along the state’s coastal waterways. Efforts are also underway to prevent vessels from being abandoned in the first place.

Floating Nightmares

As the shrimping industry in Georgia has declined over the past four or five years, Bennett says there has been an increase in sunken and abandoned vessels. Many of the aged boats would cost more to fix or salvage than the vessels are worth. As a result, owners have abandoned vessels, and some have gone as far as stripping everything of value, removing identification marks, and deliberately sinking or burning them.

“If they are truly sinister,” says Kevin Brady, legal associate for the Coastal Resources Division, “they laden the vessels with everything of a caustic nature, such as old paint, batteries, and old tires, so that it becomes a garbage dump before they sink it.”

Bennett notes vessels that have been moored and then abandoned often break away during storms and “become floating nightmares.”

One vessel that was broken up by a storm in January left debris along four miles of Jekyll Island beaches. The state had to pay for pickup and disposal of the wreckage.

While shrimp trawlers “seem to be the poster boy for the problem,” there are also problems with other vessels, says Brady. The more than 100 vessels abandoned along Georgia’s coast include barges, cranes, and recreational vessels such as sail- and speedboats—all identified as having no significant historical value.

“This is a problem in all the states and territories,” notes Brady. “It’s not just a problem in our region.”

No Treasure

The issue came to a head in Georgia two years ago with the wreck of the *Treasure D* in the Wilmington River in Savannah, Georgia.

“There was a public outcry,” says Bennett. “Kids were playing on it, its nets were still out, and it posed a real danger to safety and health, and navigation.”

As is often the case, the owner of the partially submerged shrimp boat didn’t have the money to remove it.

According to Brady, sunken or abandoned vessels typically are not covered by insurance policies. If vessel owners can be tracked down, they can escape financial

responsibility through bankruptcy laws or “a clause in federal maritime law that limits an owner’s liability to the value of the ship and its contents. Since most abandoned vessels are valueless, the owner’s liability is zero.”

Taking Inventory

During the 2006 legislative session, \$180,000 was appropriated by the Georgia legislature to remove some of the derelict vessels along the state’s shore.

A team was formed that includes members of DNR’s Coastal Resources Division, Environmental Protection Division, and the Wildlife Resources Division Law Enforcement Section to catalogue, evaluate, and prioritize the vessels for removal.

The first step was to document what was out there. “We set out with a partial list of 48 or 50 vessels, and we worked to find as many as we could,” Bennett says. They did everything from searching U.S. Coast Guard information to “physically getting in a boat with side-scan sonar and going out at low tide.”

Local boaters and charter fishermen were recruited through newspaper articles, departmental publications, and personal contacts to help identify additional vessels.

Improving Accuracy

To facilitate and more accurately document the location of the vessels, DNR applied for and received an

ESRI grant for a Trimble GeoXH 2005 Pocket PC and ESRI’s ArcPad software.

The mobile geographic information system (GIS) unit was placed on the deck of a small research vessel or was hand-carried into the marsh or water to accurately mark the location of a sunken or derelict vessel.

Digital photographs or side-scan sonar images were made of various wrecks for use on a website that allows boaters to see the water hazard as it exists.

Bennett notes that the site will be updated regularly to add or remove derelict and sunken vessels, and additional information, such as impacts to marsh vegetation or from fuel and oil leaks, will be collected. The site may help division staff members, local governments, and others in assessing marine debris.

Setting Priorities

Once the vessels were documented, the team individually prioritized the wrecks by assigning numerical values for issues such as hazards and impacts to fisheries. The group then went through the justifications for each vessel, plotting the resulting rank on an Excel spreadsheet.

“Basically the highest number was the most dangerous, and the lowest was the least,” says Bennett.

Using this methodology, the DNR used the funding from the state to remove the two most

dangerous vessels—the *Treasure D* and a barge.

The Coastal Resources Division has been able to work with permit applicants to voluntarily remove abandoned vessels as part of an expedited permitting process. Vessels also have been removed by a marina operator and vessel owners.

Determining the Risk

Another goal of the Coastal Resources Division is preventing vessels from becoming derelict or abandoned in the first place.

Staff members are meeting with the fishing industry and Coast Guard about the problem and are trying to generate funding for a boat buyback program. A new Georgia law restricts the ability of the owner of a sunken or abandoned vessel to register another boat or car in the state.

“We empathize with the fishing community,” Bennett says, “but there needs to be responsibility on the owners for their vessels.”

He adds, “We’re trying to head off some of the problems, but it’s not something that will happen overnight.” ❖

To view the Georgia DNR website on sunken vessels, point your browser to www.gadnr.org/dev/imf/?site=sunk. For more information, contact Charles “Buck” Bennett at (912) 264-7218 or buck_bennett@dnr.state.ga.us.

BALLAST WATER:

Michigan Takes On the Law



After almost 20 years and billions of dollars spent battling the environmental and economic impacts of zebra mussels and other aquatic invasive species believed to have been brought into the U.S. in the ballast water of ships, Michigan lawmakers and coastal resource managers have grown impatient with what many consider the deliberate pace of federal-level efforts to effectively stop future invasions.

On January 1, 2007, a new Michigan law went into effect that goes beyond U.S. Coast Guard ballast management requirements for Great Lakes shippers.

While the new law is already being legally challenged by shipping companies, and legal and academic observers question how long the law will be in effect before it is struck down or superseded by national or international regulations, Michigan officials say the attention the law is bringing to the issue is exactly what they were after.

“Our goal is to try to achieve a federal solution to this,” says Ken DeBeaussiaert, director the Office of the Great Lakes in the Michigan Department of Environmental Quality. “We hope the discussion that we have launched here by our actions resonates with other states who will urge their [legislative] delegations to take action.”

“I think this may get them what they want,” says Stephanie Showalter, director of the National Sea Grant Law Center at the University of Mississippi. “It has really come out—this sense of frustration across the U.S. with the lack of progress on this issue at the federal level. Many states are considering this type of approach.”

Many federal bills proposing to strengthen ballast and invasive species laws have been introduced over the past five years, but none have passed.

Invasive species is the Coast Guard’s “number one environmental regulatory priority,” says Bivan Patnaik, regulatory coordinator for the Environmental Standards Division in the Coast Guard’s Office of Operating and Environmental Standards. “This is a Great Lakes issue, a national issue, and an international issue.”

He is concerned that states trying to develop their own ballast regulations will just make it burdensome and confusing for shippers trying to comply with a variety of state laws and the federal law. He urges coastal states to wait for the Coast Guard to complete its rule-making, setting performance standards for the quality of ballast water discharged in U.S. waters, which should be released for comment this summer.

Michigan’s law is “not going to change anything we’re doing,” says Patnaik. “We’re already moving as fast as we can.”

Millions of Gallons

It is necessary for tankers to take on millions of gallons of water into large holds at the beginning of a voyage to stabilize the ships when they are traveling without cargo. Tankers in the Great Lakes can hold up to 14 million gallons of ballast water, and seagoing freighters can hold twice as much.

Once in port and ready to receive their payload, vessels may release ballast water that has traveled thousands of miles and may contain fish, plants, pollutants, parasites, or viruses. Every year, more than 21 billion gallons of ballast water are discharged into U.S. waters from international ports. An estimated 10,000 marine species are transported around the world in ballast water every day.

If the conditions of its new home are favorable, the invader may destroy habitat, damage commercial fisheries, clog intake pipes at water treatment and power facilities, or transplant foreign disease.

“There have been growing impacts to residents and businesses of this state, and the consequences of the continuing onslaught of invasive species are affecting our natural systems,” says Michigan’s DeBeaussiaert. “Invasive species impacts have been estimated in the billions of dollars and cost millions of dollars to control once they are introduced to the Great Lakes ecosystem. Too often, trying to control them is a losing battle.”

“In this state, we came to the conclusion that we could take action within the purview of our authority.”

*Ken DeBeaussiaert,
Michigan Department of
Environmental Quality*

The Invasion

There are estimated to be more than 187 nuisance species in the Great Lakes, with new species continuing to be detected.

While ballast water is thought to be the biggest source of aquatic invasive species, it is certainly not the only one. Hull fouling, recreational fishing, aquarium owners dumping fish—all are among the avenues by which alien species are introduced, says Don Scavia, director of Michigan’s Sea Grant.

The best known of the Great Lakes offenders is the zebra mussel, first found near Detroit in 1988. It fouls water intakes and is blamed for crashing the base of the Great Lakes food chain.

Now Great Lakes managers and scientists are fighting VHS—viral hemorrhagic septicemia—a disease that causes fish to bleed to death internally. So far, it has been reported in Lakes Ontario, Erie, and St. Clair, and is expected to spread to Lake Michigan.

Quagga mussels (left) and spiny water fleas (right and following page) are just a few of the invasive species believed to have been brought into the Great Lakes in ballast water.

“What we don’t know,” DeBeaussiaert says, “is what the implications of the next invasive species will be on the system, and if it will have a cumulative effect.”

Establishing the Rules

Following the zebra mussel invasion of the Great Lakes, Patnaik says the 1990 Nonindigenous Aquatic Nuisance Prevention and Control Act authorized the Coast Guard to develop regulations for a mandatory ballast water management program for the Great Lakes.

Beginning in 1993, Great Lakes vessels were required to empty and refill their ballast tanks at sea because organisms from high-salinity ocean water are less likely to survive when released into Great Lakes freshwater, or less salty coastal waters.

Ships can also refrain from discharging ballast water, or use a Coast Guard-approved method of ballast water management, although no method has received approval.

“One of the issues right now is that vessels don’t have to conduct an exchange if there are safety issues, or if the voyage doesn’t take them 200 miles offshore,” Patnaik notes. “Treatment options would help in those situations.”

Ships traveling in the Great Lakes are required to maintain onboard ballast water records.

Some ships come in fully loaded with no ballast on board, known as NOBOB, so they do not have to do the ballast exchange. However, some unpumpable material still remains in the tanks that can contain harmful organisms.

In 2005, the Coast Guard established a policy of voluntary best management practices for NOBOB vessels entering the Great Lakes, which encourages those ships to conduct saltwater flushing of their ballast tanks.

Continued

Additional Information

- The Michigan Department of Environmental Quality’s website on ballast water reporting, www.michigan.gov/deq/
- The U.S. Coast Guard’s Environmental Standards website, www.uscg.mil/hq/g-m/mso/estandards.htm
- The National Sea Grant Law Center’s ballast water white paper, <http://seagrant.umn.edu/downloads/ballast.pdf>



Continued from Page 5

Going Nationwide

Aquatic invasions occurring in other U.S. waters prompted Congress in 1996 to authorize the Coast Guard to develop national voluntary ballast water management guidelines for all other U.S. regions, Patnaik says. The voluntary guidelines went into effect in 1999.

A congressionally mandated evaluation in 2002 found that a large percentage of vessels were not participating in the voluntary program. In July 2004, the Coast Guard established a national mandatory ballast water management program.

Since then, the Coast Guard has been developing performance standards for the quality of ballast water discharged in U.S. waters. This rule-making includes approving alternative ballast water management systems and is expected to be complete by the end of this year.

"With the development of all federal regulations, we have to conduct a thorough environmental and economic analysis," public comments are taken, and those are factored into the final regulations, Patnaik explains.

"One of the things that has not been working is there needs to

be more communication between us and the states about what we are doing," Patnaik admits. "A lot of states assume we aren't doing anything. They have no idea of all the work we have done getting regulations and permits in place."

Not Waiting

"The Coast Guard has been working on this process for some time, and we've been frustrated by the pace of action," says DeBeaussaert. "In this state, we came to the conclusion that we could take action within the purview of our authority, and encourage neighboring states to take action and protect their resources, which are under attack."

The resulting ballast legislation uses the state's Clean Water Act provision authority to require oceangoing ships to obtain a \$75 permit from the Department of Environmental Quality to use Michigan ports. Permits are issued only if the applicant demonstrates that they will either not discharge ballast water or will use one of four state-approved alternative technologies and methods to prevent the discharge of aquatic invasive species.

In addition to Michigan being the first Great Lakes state to require

such a permit, "what is key about this legislation," says Stephanie Showalter, "is that Michigan adopted designated treatment options for ballast water before the federal government."

Another difference of Michigan's law, which took effect January 1, is that it addresses the NOBOB vessels by requiring all oceangoing ships to obtain a permit. Of the roughly 500 oceangoing vessels entering the Great Lakes in a year, about 90 percent are exempt from federal regulations because they are cargo-laden and report no ballast on board.

So far, about 58 permits have been issued, says DeBeaussaert. State officials think this is close to the number of oceangoing ships that make up the 90 or so annual vessel calls to Michigan ports. Of those, only about four report discharging ballast in the state's waters.

"Michigan is not heavily impacted by oceangoing ships," notes Dale Bergeron, assistant professor and extension educator in maritime transportation for the University of Minnesota Sea Grant Program. "Michigan doesn't view shipping as having a major impact on their economy."

The Appeal

While shipping companies plying Michigan's waters are acquiring the permit, observers say it may only be a matter of time before the law is struck down in court, or national or international guidelines take precedence.

In March, four shipping companies, four shipping associations, and one dock company filed a complaint in the U.S. district court in Detroit asking a judge to declare the Michigan Ballast Water Act unconstitutional because it interferes with interstate commerce.

Continued on Page 9

Bringing Hazards Information Together in Maryland

Many agencies typically work on state coastal hazards issues, which can make it hard for property owners, teachers and students, and even coastal resource managers to know where to turn for information and assistance. To solve this dilemma, Maryland coastal managers helped lead an effort to bring together all the state's coastal hazards information and tools onto a single website.

"The Web was the perfect tool for this."

*Audra Luscher,
Maryland Coastal Zone
Management Program*

"Our vision was having a one-stop shop for coastal hazards in Maryland," says Audra Luscher, coastal hazards specialist for the Maryland Department of Natural Resources Coastal Zone Management Program. "We've been working on hazards for five years, and we wanted a centralized place where everyone could access all the great stuff we've been working on."

The result is Maryland Shorelines Online, a coastal hazards Web portal that enhances state agency coordination and provides information to a variety of users on assistance and tools needed to understand, assess, and manage hazards issues.

The Web portal provides everything from policies and

regulations to information on technical and financial assistance. It gives users access to geographic information system (GIS) maps and shoreline inventory tools, as well as teacher lesson plans and fact sheets.

"We were at one of those points where technology became available that could meet our needs," Luscher says. "Internet mapping systems became more accessible and widely used and will soon allow us to include very memory-intensive data sets, such as lidar elevation data."

The Maryland Coastal Program worked with Towson University Center for Geographic Information Sciences and Maryland Geological Survey to develop and design the website.

Luscher notes that there was "a lot of discussion up front" between state agencies working on hazards issues to determine the scope and content of the website. Needs assessments of various groups, including local and county governments and citizens' groups, also were used.

"We wanted to tailor it to all of our needs," she says.

One of those needs included developing a training manual and users' guide for the site. In addition to sending out press releases and working with the media to attract users, coastal program staff members went on the road to festivals and meetings and provided training sessions to targeted user groups.

Survey feedback shows that the site is being used by a "wide network of users," Luscher says,



with homeowners using the site the most. Government staff members also are using the site to work with homeowners to help them understand their hazards risks.

"The Web was the perfect tool for this," Luscher says. "When you have aerial imagery and you can see water overlying the majority of a county, it's easier for homeowners to understand. It's also easy for resource managers to print one page off and have a dialogue about it." ❖

To view Maryland Shorelines Online, point your browser to <http://shorelines.dnr.state.md.us>. For more information, contact Audra Luscher at (410) 260-8743, or ALuscher@dnr.state.md.us.

Using Purchasing Power to Protect Lands in Puerto Rico

The acquisition of land slated to become one of Puerto Rico's largest hotels is the latest success in the commonwealth's coordinated efforts to protect more than 100,000 acres over the next 10 years. So far, over 10,000 acres of the island's ecologically important lands have been purchased and will remain undeveloped.

All conservation land acquisition efforts led by Puerto Rico's government, as well as the island's federal agencies and nonprofit organizations, are being bundled together as part of the governor's Heritage 100,000 initiative.

"It's helped to integrate and redouble our land acquisition efforts," notes Ernesto Diaz, natural resources administrator for the Department of Natural and Environmental Resources (DNER). "Maybe one program is not able to acquire a piece of land, but if we combine funding and join efforts, we can achieve the common objective of protecting important ecological areas."

The latest purchase agreement entered into by DNER will protect land adjacent to the largest mangrove lagoon and wetland in Puerto Rico—the Piñones Natural Reserve. The amount of acreage included will be determined when a survey is complete, but Diaz says the parcel is significant.

A permit for developing the now-abandoned \$220 million Costa Serena project was

approved more than a decade ago. Public pressure and the area's potential impacts from coastal storms helped "convince the owner to sell," Diaz says.

"Maybe one program is not able to acquire a piece of land, but if we combine funding and join efforts, we can achieve the common objective of protecting important ecological areas."

*Ernesto Diaz,
Puerto Rico Department
of Natural and
Environmental Resources*

To help meet the vision of Gov. Aníbal Acevedo-Vilá to preserve 100,000 acres—roughly 15 percent of the island—a committee of staff members from groups committed to acquiring Puerto Rico's lands for protection meets quarterly to prioritize purchases, says Rossana Vidal, land acquisition coordinator for DNER.

Vidal explains that a geographic information system (GIS)-based priority matrix is based on indicators of importance, such as wetlands, rivers of importance, connecting corridors between habitats, cultural resources, and threatened and endangered species.

Diaz notes that while they try to abide by the committee's priorities, the groups are not "precluded from purchasing other areas if they become available." This flexibility enabled DNER to enter into negotiations for the Costa Serena project lands, which "became a priority due to its high ecological value."

DNER works to acquire lands under the Land Stewardship Program, Natural Heritage Program, and the High Ecological Value Trust, and recently submitted its first proposal to the Coastal and Estuarine Land Protection program. Other conservation partners such as the Puerto Rico Conservation Trust, the U.S. Fish and Wildlife Service, the Trust for Public Lands, and the U.S. Department of Agriculture also acquire lands for protection.

"This has become a morally important tool for protecting high-value ecological areas," Diaz says. "There are challenges in terms of different groups working together, but the result is that we're purchasing lands that are preserving ecological diversity and natural systems." ❖

For more information on Heritage 100,000 or DNER's land acquisition programs, contact Ernesto Diaz at (787) 721-7593, or ediaz@drna.gobierno.prt. You may also contact Rossana Vidal at rvidal@drna.gobierno.prt.

Continued from Page 6

"Similar ballast laws are being considered in Minnesota, Wisconsin, and Indiana," says Bergeron. "What happens with the Michigan law will likely impact what these states attempt."

The Ballast Water Management Act of 2007 was introduced in the U.S. Senate in June, and Coast Guard staff members are working internationally on a ballast water treaty adopted by the International Maritime Organization (IMO), an agency of the United Nations.

The U.S. has yet to sign the International Convention for the Control and Management of Ships' Ballast Water and Sediments, which would not go into effect until 12 months after 30 countries have signed it.

Uniformity

Patnaik believes that "having a uniform national or federal program is the best way to prevent invasive species from further coming into U.S. waters."

"Single state action is not fully effective," agrees DeBeaussiaert. "It is better to have a national approach that protects the Great Lakes. That's our ultimate goal here."

He adds, "I think clearly we are on the front lines as it relates to the invasive species problem, but the implications go beyond Great Lakes waters." ❖

For more information on Michigan's ballast water law, contact Ken DeBeaussiaert at (517) 335-4056, or debeausk@michigan.gov. For information on the U.S. Coast Guard's regulations for ballast water, contact Bivan Patnaik at (202) 372-1435, or Bivan.R.Patnaik@uscg.mil.

STORM SURGE, EROSION, FLOODING

is your community ready?

Find out with the Risk and Vulnerability Assessment Tool.

www.csc.noaa.gov/rvat/

Storm Information Site

Getting the Data You Need Before, During, and After the Storm

- **The Storm Data Resource Guide** provides storm-related data and tools.
- **The Storm Mapping Tutorial** helps you obtain, display, and map storm-related data using geographic information systems.

www.csc.noaa.gov/storm_info/

IT'S BACK TO SCHOOL TIME!

Training for Coastal Officials

www.csc.noaa.gov/training/

Most courses can be brought to you.
Contact the NOAA Coastal Services
Center for more information.



NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

Process Skills; Geospatial Technology; Coastal Issues; Managing Visitor Use; GIS Training; Public Issues and Conflict Management

NOAA Coastal Services Center
2234 South Hobson Avenue
Charleston, SC 29405-2413

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



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