COASTAL SERVICES

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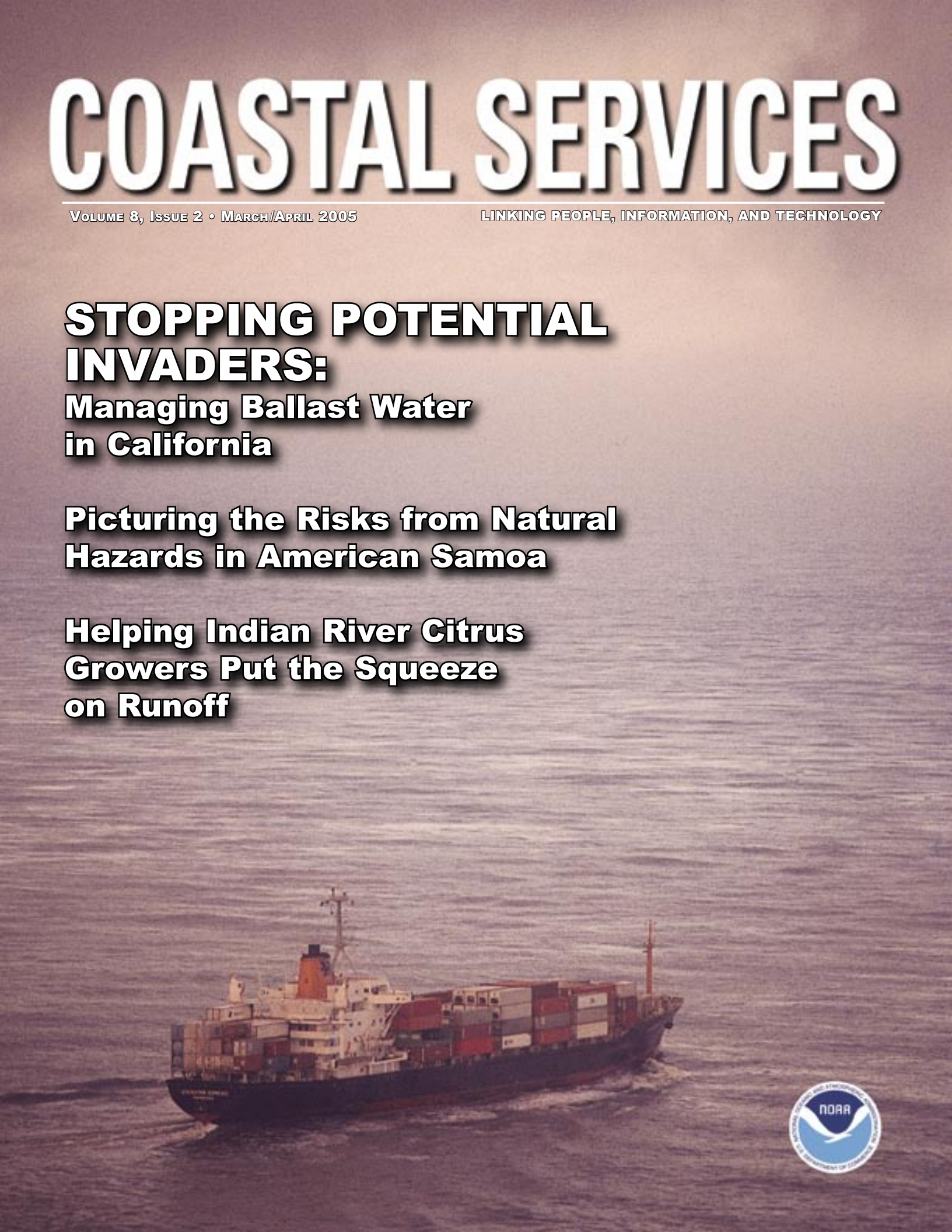
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

STOPPING POTENTIAL INVADERS:
Managing Ballast Water in California

Picturing the Risks from Natural Hazards in American Samoa

Helping Indian River Citrus Growers Put the Squeeze on Runoff



From the Director

According to researchers at Cornell University, the control of and damages from alien invasive species in the U.S. amounts to almost $120 billion per year.

The researchers go on to conclude, "The true challenge lies not in determining the precise costs of the impacts of exotic species, but in preventing further damage to natural and managed ecosystems. Formulation of sound prevention policies needs to take into account the means through which alien species gain access to and become established in the United States."

While aquatic invaders can arrive through many pathways, ballast water has been identified by researchers as one of the major sources of alien plants, animals, and bacteria in U.S. waters. Any of these species has the potential to become an invader.

In addition to national and international efforts to provide guidance and regulations for minimizing and preventing introductions from ballast, the State of California passed legislation in 1999, and again in 2003, making it the first to require ships to exchange ballast water at sea to minimize the possibility of transporting invasive species.

In the cover story of this edition of *Coastal Services*, we will examine California's Marine Invasive Species Program, exploring both its strengths and weaknesses.

In every edition of *Coastal Services*, we highlight information about coastal resource management issues and successful management programs as a way to help coastal managers communicate with and learn from each other. The magazine provides profiles of programs that the coastal management community can use to educate its agencies and constituents.

To serve you better, the National Oceanic and Atmospheric Administration's (NOAA) Coastal Services Center is undergoing a formal evaluation of *Coastal Services* and its sister publication, *Coastal Connections*.

As part of this evaluation, reviewers will be contacting subscribers to find out how our publications can better meet your needs. We would appreciate your cooperation in this effort. Your responses will help make sure *Coastal Services* and *Coastal Connections* contain the information you want to read.

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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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*

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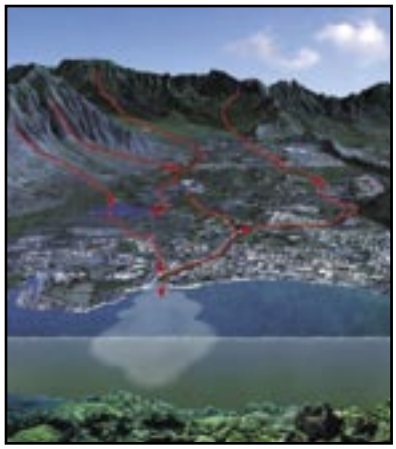
News and Notes

New Nonpoint Source Pollution Product for Coastal Resource Managers

As pollution and sediment levels from point sources and nonpoint sources continue to mount, coastal and inland water quality issues are of increasing concern among water resource managers and planners worldwide.

That's why the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center developed the Nonpoint Source Pollution and Erosion Comparison Tool (N-SPECT). This easy-to-use, geographic information system (GIS) tool helps managers and officials predict potential water quality impacts to rivers and streams from nonpoint source pollution and erosion.

To use this tool, a resource manager would first enter land cover, elevation, precipitation, and soil characteristics for an area of concern to create the base data layer. Then, the user could examine different land cover change scenarios (such as a development) to get information about potential impacts to surface water runoff, nonpoint pollution, and erosion.



N-SPECT was initially created as a decision-support tool for the Waianae area of Oahu, Hawaii; however, it is designed to be portable to any watershed. Data provided with N-SPECT cover the Waianae region, located on the western side of Oahu, and include U.S. Department of Agriculture soils data, U.S. Geological Survey digital elevation model data, and NOAA Coastal Change Analysis Program (C-CAP) land cover data. ❖

For more information, point your browser to www.csc.noaa.gov/nspect/, or contact Dave.Eslinger@noaa.gov.

Proposed low-intensity development is shown in yellow in this satellite image.

For the area shown, N-SPECT was used to estimate existing pollution levels and predict post-development levels. A comparison of the two data sets produced the change map above. Areas where nitrogen is predicted to increase are shown in blue; red illustrates areas where nitrogen decreases are predicted.

Requirements and Results

What's needed to use N-SPECT:

- Spatial Analyst® extension
- Basic GIS skills
- Land cover grid
- Digital elevation model
- Precipitation grid
- Set of land cover pollutant coefficients
- Water quality standards
- Soil type data

What's gained by using N-SPECT:

- Accumulated runoff, pollutant, and sediment load grids
- Pollutant and sediment concentration grids
- Pollutant assessment grid, which compares the resulting concentrations in receiving waters to user-specified water quality standards
- Ability to simulate land cover changes, such as development

When users download N-SPECT, they will receive on-line help files, a step-by-step tutorial, a user's manual, and a technical guide.

To download the N-SPECT extension for ArcView® 8.3 and the patch for ArcView 9.x, go to www.csc.noaa.gov/nspect/.

Photo courtesy of American Samoa Coastal Management Program

Picturing the Risks from Natural Hazards in American Samoa

Finding a quick and easy way to visually show developers the range of hazards a proposal might face was a critical planning and permitting need for the islands' coastal program.

For three days in January 2004, strong winds and heavy rains from a near miss by Hurricane Heta displaced more than 3,000 families from their homes and left the island of Tutuila, American Samoa, with no electricity or water.

In addition to hurricanes, Tutuila, the largest and most populated of the seven South Pacific islands that make up the U.S. territory of American Samoa, is vulnerable to tsunamis, flooding, landslides, and earthquakes.

But the public often is unaware of the natural hazard risks when they apply to the American Samoa Coastal Management Program for building and development permits. Finding a quick and easy way to visually show developers the range of hazards a proposal might face was a critical planning and permitting need for the islands' coastal program, says manager Genevieve Brighouse.

The solution was a Web-based, "point and click" geographic information system (GIS) tool that allows the coastal program staff and permit applicants to rapidly and accurately identify potential hazard risks for any location on Tutuila. This location-specific information is provided to the user in the form of a text summary, as well as a map.

With this information in hand, Brighouse says, developers now "understand what it will entail to produce a proposal that will be acceptable in terms of the types of hazards it will be exposed to."

The tool is so simple that with only a little bit of technical expertise it could easily be modified for other coastal areas and issues.

Part of the Plan

The Tutuila Hazard Assessment Tool (T-HAT) was the result of a partnership between the American Samoa Coastal Management Program, which is part of the American Samoa Department of Commerce, and the National Oceanic and Atmospheric Administration's (NOAA) Pacific Services Center and Coastal Services Center. Using Internet Explorer, this ArcIMS-based tool can be viewed at *www.csc.noaa.gov/t_hat/*.

T-HAT makes use of GIS hazard data used in American Samoa's recently completed Hazard Mitigation Plan, which the Disaster Mitigation Act of 2000 requires states and territories to complete to receive Federal Emergency Management Agency (FEMA) funding for hazards mitigation.

"This was a really good opportunity to take existing information that was developed for another purpose and repackage it with a different focus to meet a different user's needs," says John Marra, a Perot Systems Government Services natural hazards specialist contracting with the NOAA Pacific Services Center in Hawaii.

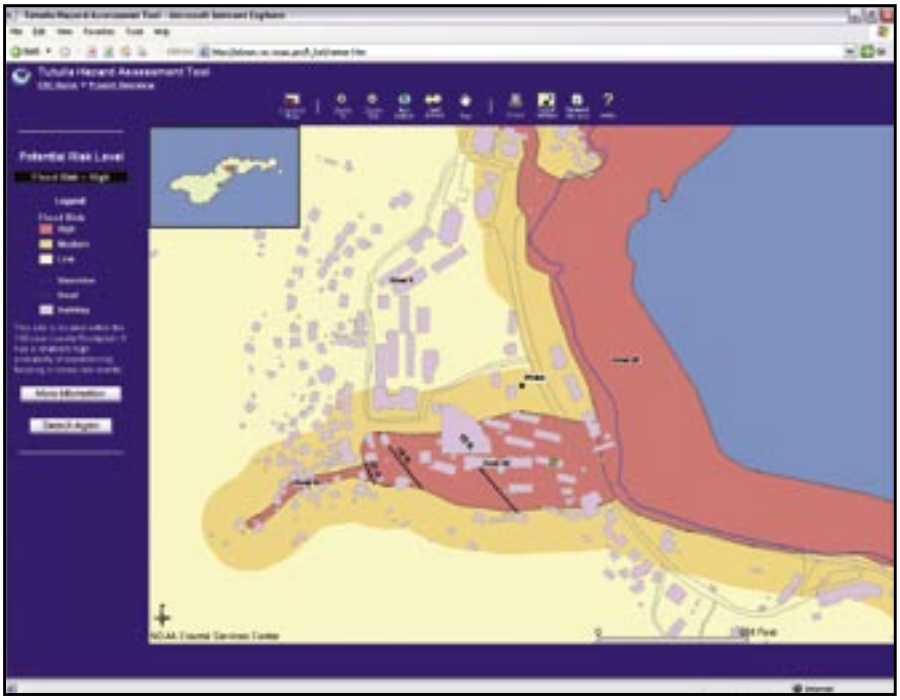


Image courtesy of NOAA Coastal Services Center

T-HAT users can easily zoom to a village, select a hazard to identify, and, by clicking on the map, obtain the potential hazard risks for that location.

To make the data easily accessible, custom tools were built to query the data for site-specific hazard information, explains Russell Jackson, NOAA Coastal Services Center coastal hazards specialist.

It would not take much, Jackson adds, for coastal managers in other areas to create their own hazard assessment tool. "It would be very simple to take this shell and insert your own data, and you would have the tool. All you need to be able to use it is a Web browser."

Marra notes that the tool also could be expanded to include more than just hazards data. "The same tool could identify wetlands or other sensitive resources—whatever you have the need and data for."

Putting It to Use

In four easy steps, T-HAT allows users to zoom to a village, select a hazard to identify, and, by clicking on the map, obtain the potential hazard risks for that specific location, Marra explains.

The first step is to "Select Your Village" from a drop-down menu. In the second step, "Select a Hazard to Identify," users choose a hazard from a drop-down list that includes tsunamis, flooding, landslides, earthquakes, or all hazards.

At this point, step three, the user then clicks the "ID Hazard" button, which zooms the map to the selected village and displays the appropriate hazard layer.

Finally, in step four, the user clicks on the specific proposal site, and information about the potential hazards affecting the site is provided. By clicking on the "More Information" button, users can learn the source of the data.

"When the computer shows them their proposal is in a landslide area, it really brings the message home," says Brighouse. "We needed to make that connection. The public did not understand the risks. They sometimes think the government has a hidden agenda, and they often wanted more information than we could easily provide. Now we can sit down with them and visually show them the hazards and that there is data to back it up."

She adds, "This is a critical tool for us."

The Next Wave

Since the American Samoa Coastal Program began using T-HAT last October, the island has experienced a "very serious landslide," and a massive tsunami struck Asia the day after Christmas.

"This tool has been very timely," Brighouse says. The vulnerability of the islands to natural hazards has "really been brought home."

Brighouse says they plan to enhance the tool, which is already used daily by coastal program staff members, by integrating additional data layers and expanding its application to include outreach and education efforts. Plans also are underway to educate other American Samoan government agencies about the tool so that the public receives a "consistent message, no matter if it is from us or public works."

Marra notes that by expanding the tool's data layers, such as data on historic losses and demographics, it could be vital in the planning and response to a tsunami or other natural disaster. "It could be used by emergency managers to prioritize areas where assistance is needed to facilitate evacuation should an event occur, or prior to the event for targeting the dissemination of educational materials."

Brighouse recommends T-HAT for all coastal managers who have permitting abilities, particularly those on other islands. "I would strongly recommend others look into this as a model for addressing hurricanes, flooding, landslides—all the immediate threats that are common to all of us." ❖

To view the Tutuila Hazard Assessment Tool (T-HAT), point your browser to www.csc.noaa.gov/t_hat/ (use Internet Explorer). For more information on the use of the tool, contact Genevieve Brighouse at (684) 633-5155 or Gene.Brighouse@noaa.gov. For technical questions, contact Russell Jackson at (843) 740-1188 or Russell.Jackson@noaa.gov.

Stopping Potential Invaders:

Managing Ballast Water in California

"Several species have caused dramatic damage to the ecosystem."

Maurya Falkner, California State Lands Commission

Every day, ships from all over the world discharge large quantities of ballast water carrying plants, animals, and bacteria into U.S. waters. Any of these aliens may be a potential invader that could oust native species, degrade native habitats, and create huge economic and social impacts.

Although aquatic invaders can arrive through many pathways, research in the 1990s identified ballast water as one of the major sources. By then, San Francisco Bay was one of the most highly invaded ecosystems in the world.

Concerned that national and international efforts to provide guidance and regulations for minimizing and preventing introductions from ballast didn't go far enough to protect state waters, California passed the Ballast Water Management for Control of Nonindigenous Species Act of 1999.

With this legislation, the state became the first to require ships to exchange ballast water at sea to minimize the possibility of transporting invasive species. Other states, such as Washington and Oregon, soon followed with their own legislation.

While California's Marine Invasive Species Program is generally considered a success, shipping industry representatives say they are concerned about the "patchwork quilt" of state, federal, and international guidelines and regulations that ship captains find themselves under as they move from port to port.

To help smooth the regulatory transition, California has standardized its paperwork and inspection requirements with those of the U.S. Coast Guard, and is working with the other western states, as well as British Columbia, Canada, to develop a regional approach for addressing ballast water management.

Those interviewed for this article agree that ballast water exchange is a stop-gap measure until technology is developed that eliminates the threat from stowaway organisms.

Spotting an Invasion

Nonindigenous aquatic species are now reported in San Francisco, Los Angeles, San Diego, and many smaller harbors and embayments throughout California. But it was the 234 nonindigenous species identified in San Francisco Bay that sounded the state's alarm about the issue, says Maurya Falkner, environmental program manager for the California State Lands Commission's Marine Invasive Species Program.

"Several species have caused dramatic damage to the ecosystem," notes Falkner. "It's a huge problem."

Falkner points to the Asian clam, which eats up the food sources of native fish, and the Chinese mitten crab, which in 1998 shut down water supply systems, impacting drinking water and agriculture, as two of the most damaging species to the bay.

Getting Into the Act

Recognizing the significance of the problem, the California lawmakers passed legislation establishing a statewide, multiagency program that makes ballast water management mandatory.

California's original law applied to all U.S. or foreign vessels that enter state waters after operating outside the U.S. Exclusive Economic Zone (EEZ). Vessels must either conduct a mid-ocean exchange of ballast water or retain all ballast water on board the vessel. This law was later expanded to include all vessels entering California ports.

A baseline assessment and continued monitoring of the state's marine environment, as well as evaluation of alternative methodology for controlling invasive species introductions, are part of the program.

One of the keys to the program's success, says Falkner, is that it is funded through a fee that vessels must pay when calling on a California port. The fee is currently set at $500 per voyage, but will be reduced to $400 per voyage in spring 2005.

Allowable fines of up to $500 a day for noncompliance are rarely given, but they have been important to ensuring industry compliance with the program, Falkner says. "Our policy is not

to support the program with fines. If we can get these guys to voluntarily comply, we would rather go that route."

A 25-member advisory group that includes industry representatives, as well as staff members from regulatory agencies and environmental organizations, helps lead and evaluate the program. "We spent a lot of time working with the industry and environmental groups when developing the legislation," notes Falkner.

The original bill had a sunset date of December 31, 2003, and was renewed that year by the state legislature.

Big Numbers

Industry compliance with California's program is close to 100 percent, which is documented through fee payments, report filings, and an onboard inspection program.

"It's really pretty amazing," notes Falkner. "The industry wants to comply. They want to be able to say they are doing the right thing."

She adds, "It's working here, at least at the programmatic level. We've reduced the introduction of species, at least by commercial vessels."

John Berge, vice president of the Pacific Merchant Shipping Association, acknowledges that California's program has been "effective" at achieving the state's goals, but he has concerns about other states looking to produce similar legislation.

"One of our mantras is that we would like to see a comprehensive approach" to addressing ballast issues, Berge says. "We really feel like there is a patchwork quilt of regulations" that can be confusing for ship captains and international shipping companies.

"Ideally, we would prefer international regulation to address this," Berge says. "Secondly, we would prefer to see a federal program that is stringent enough that it provides the safeguards that local and state managers feel they require."

Filling the Gaps

California's regulatory approach has other limitations, notes Linda Sheehan, executive director of the California CoastKeeper Alliance. The original legislation "only addressed ballast water coming from other countries. It didn't address ships coming from other states" that never went beyond the EEZ. California is now working with Alaska, Washington, Oregon, and Canada to help "fill that gap."

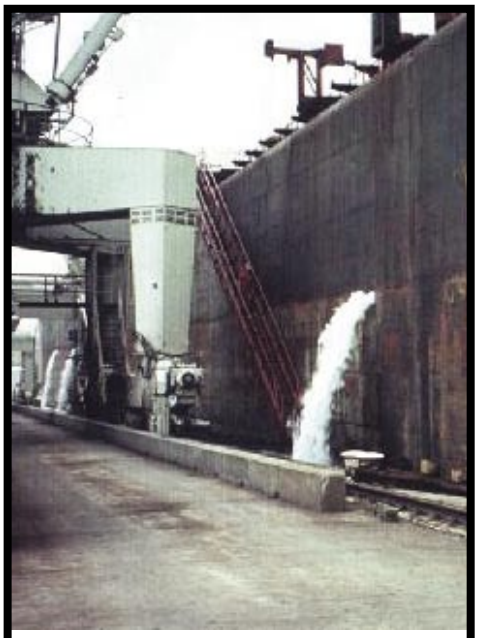
Sheehan also points out that exchanging ballast water "is not as effective as it should be. It's a stopgap method. We need to move forward on treatment or retention options."

"Everyone agrees this is essential," Berge says. "Our industry has stepped up and volunteered to pursue advancements in experimental technologies for onboard treatment."

While addressing ballast water is paramount to preventing aquatic invasions, other avenues of introduction should not be ignored, advises Sheehan. Invasive species can be introduced through a number of avenues, including aquaculture, marinas, and recreational fishing.

"In some ways, ballast is low-hanging fruit," Sheehan says. "It needs to be tackled, but so do all the other sources." ❖

For more information on the California Marine Invasive Species Program, contact Maurya Falkner at (916) 574-2568 or FALKNEM@slc.ca.gov. You may contact John Berge at (415) 352-0710 or jberge@pmsaship.com, and Linda Sheehan at (510) 770-9764 or LSheehan@cacoastkeeper.org.



Photos courtesy of California State Lands Commission

For more information on state, national, and international efforts to address the introduction of aquatic nuisance species through ballast water, point your browser to the following Web sites:

Aquatic Nuisance Species Task Force
www.anstaskforce.gov

California State Lands Commission
www.slc.ca.gov

Great Lakes Panel on Aquatic Nuisance Species
www.glc.org/ans/

International Maritime Organization
www.imo.org

National Ballast Information Clearinghouse – Smithsonian Environmental Research Center
http://invasions.si.edu/nbic/

Northeast-Midwest Institute Aquatic Invasive Species Site
http://nemw.org/biopollute.htm

U.S. Geological Survey Nonindigenous Aquatic Species Site
http://nas.er.usgs.gov

Sea Grant Nonindigenous Species Site
www.sgnis.org

U.S. Coast Guard Ballast Water Program
www.uscg.mil/hq/g-m/mso/bwm.htm

West Coast Ballast Outreach Project
http://ballast-outreach-ucsgep.ucdavis.edu

Michigan Alliance Supports Conserving Coastal Resources

Michigan is home to the most extensive freshwater dune system in the world. Some coastal dunes along Lake Michigan are so vast and dramatic that it is reported they can be seen by astronauts orbiting the Earth.

But like many coastal areas around the country, the dunes of Lake Michigan are experiencing pressures from new residential development.

Protection provided by critical dune regulations under Michigan law only applies to about 70,000 acres, leaving hundreds of thousands of acres of dunes open to potential development.

"When it comes down to it, purchasing the development rights or making an outright acquisition is often the only way to protect these sites for future generations."

Christy Fox-Weaver, Michigan Coastal Zone Management Program

In addition to residential development, the state's dunes face threats from invasive species, sand mining, and recreational activities, such as off-road vehicles.

To help protect the state's remaining dunes, a conservation coalition of every regional land trust active along Lake Michigan, as well as state and federal agencies and other nonprofit conservation organizations, was formed in 1999.

The resulting Michigan Dune Alliance promotes conservation and stewardship of coastal marshes, dunes, forests, and freshwater river systems along the shores of Lake Michigan.

"There are a few remaining large tracts of land along Lake Michigan with high conservation values that are still undeveloped," says Christy Fox-Weaver, project manager for the Michigan Coastal Zone Management Program. "This is our final chance to help [land trusts] acquire these sites if we can."

Fox-Weaver adds, "When it comes down to it, purchasing the development rights or making an outright acquisition is often the only way to protect these sites for future generations."

Starting in 2000 with a $50,000 seed grant from the Michigan Coastal Zone Management Program, the Dune Alliance was able to get funding from the Charles Stewart Mott Foundation and U.S. Environmental Protection Agency to identify and target 14 ecologically important sites for conservation efforts, and to develop the capacity of the participating organizations.

"I think the greatest success [of the Dune Alliance] so far has been the strengthening of the local conservation organizations," by providing everything from operating support, funds to hire additional staff, and assistance with geographic information system mapping to community education funds, says John Legge, conservation director for the West Michigan Program Office of the Nature Conservancy.

Legge adds, "A number of really significant conservation actions have been happening that may not be solely because of the Dune Alliance, but that certainly have been facilitated" by alliance support.

Legge and the Nature Conservancy have been hired by

Photo courtesy of Michigan Coastal Zone Management Program

the Dune Alliance to "build on its prior success" and evaluate where it should go from here. This began with a strategic planning session last year where, Legge says, the group expanded the priority lands for protection to 42 areas along the coast, and committed to beginning activities that will address coastal wetlands restoration and stewardship, as well as invasive species.

Legge and the Nature Conservancy also are creating outreach materials for use by Dune Alliance members to educate private coastal landowners about the importance of protecting their property.

By bringing the "money, resources, and knowledge" of the various organizations and agencies together, says Fox-Weaver, "we've been able to accomplish really big things." ❖

For more information on the Michigan Dune Alliance, contact Christy Fox-Weaver at (517) 335-3452 or foxcl@michigan.gov. You also may contact John Legge at (616) 785-7055, ext. 12, or jlegge@tnc.org.

Helping Indian River Citrus Growers Put the Squeeze on Runoff

Citrus has been grown along the Indian River Lagoon since the 1500s, and today, the lagoon region supports a $2.1 billion citrus industry. A multiagency program funded through the sales of Indian River Lagoon license plates is helping citrus growers minimize the negative impacts that runoff from the groves can have on water quality in the 156-mile-long estuary.

Citrus growers "want to be good neighbors," says Wayne Mozo, project administrator for the Indian River Lagoon Program, which is part of the National Estuary Program. "They live here and use the waterways like the rest of us. They want to do what's right."

To help them in this effort, the University of Florida's Indian River County Cooperative Extension Service and the Indian River Soil and Water Control District have initiated a cost-share program that helps growers replace or upgrade water control structures that manage the release of water entering the lagoon.

In citrus groves, water control structures known as screw gates are commonly used to manage water flow. Screw gates release excess water through the bottom, which easily transports sediment and nutrients downstream. Upon reaching the lagoon, these harmful sediments reduce water quality and starve sea grass of sunlight.

Cost-share funding has been used to purchase equipment that can more precisely apply fertilizers to citrus groves.

Photos courtesy of Natural Resources Conservation Service

This riser board structure is an example of an improved water control structure that has been installed in citrus groves in Indian River County.

Under the Indian River County cost-share program, license plate money covers 75 percent of the cost of replacing screw gates with riser board structures, which allow sediments to settle out before draining water reaches the lagoon. Growers pay the remaining 25 percent of the cost for the upgrades.

The program is funded by a $50,000 grant from the Indian River Lagoon license plate program. These special license plates cost residents $15 more than regular state tags, and in the past 10 years, have raised more than $3.5 million for lagoon projects that improve water quality and habitat, says Troy Rice, director of the Indian River Lagoon Program.

Upon reaching the lagoon, these harmful sediments reduce water quality and starve sea grass of sunlight.

Since 2002, Rice says, more than $100,000 in cost-share grant funding has allowed area citrus growers to put in 19 flashboard riser structures. In addition, a sediment pond has been constructed in one of the groves, which allows the grower to reuse water for irrigation purposes and reduces the amount of fertilizer that is needed.

To receive the grant money, growers must attend educational workshops on implementing best management practices. They also must submit an application to a review board, made up of staff members from the partnering agencies, explains Mozo. Growers' applications must include professional cost estimates for proposed improvements.

Although confident that the program will result in a "reduction overall of sediment loads," an ongoing monitoring program will help determine the program's impact on water quality, Rice says. "We hope to have initial results by this summer." ❖

For more information on the Indian River County cost-share program, contact Troy Rice at (321) 984-4950 or trice@sjrwmd.com. You also may contact Wayne Mozo at (321) 984-4944 or wmozo@sjrwmd.com.

Finding the Culture in New Hampshire's Natural Resources

It is October, and even though the sun is shining, the wind off Great Bay stings with cold. Soon, the first snow will fall. Turning from shore, you walk quietly through the woods, hearing the call of a wild turkey and stopping to examine deer tracks. When you reach camp, shelter from the wind is found by ducking into a birch-bark wigwam. Settling in around the fire, you savor the taste of smoked fish.

"You can teach anything you want using cultural history."

Kelle MacKenzie, Great Bay National Estuarine Research Reserve

While the scene above describes part of an education program offered every fall by the Great Bay National Estuarine Research Reserve (NERR) in Stratham, New Hampshire, it could just as well describe the experience of the Msquamskek people who called the estuary home 400 years ago.

Over six weeks in September and October, more than 1,500 third- through fifth-grade students get to experience an Abanaki-style fishing encampment, as well as climb aboard the only Piscataqua River gundalow left in existence to see how early European settlers used the bay to transport their goods.

"Our whole fall school program focuses on the cultural history of Great Bay as it relates to the natural resources that were available at the time, and that are still available," says Kelle MacKenzie, the reserve's education coordinator.

The Fall Cultural History Program, MacKenzie says, is one of the NERR's most popular educational offerings. Teachers must sign up in May, and all program slots are filled within two days. Program evaluations are "always amazing."

Photo by Cody Bisnett and courtesy of Great Bay National Estuarine Research Reserve

A birch-bark wigwam is used to help teach students about modern hunting and fishing management.

Each group of 40 to 75 students and chaperons from across the State of New Hampshire, as well as many from Massachusetts and Maine, spends three hours at the reserve's Sandy Point Discovery Center experiencing the evolving cultural history of the area through listening to interactive storytelling, exploring the wigwam and gundalow, walking trails used by Native Americans, and more.

Over 50 specially trained volunteers and NERR staff members lead the finely scheduled free tours and help bring the natural and cultural history of the area to life.

One of the primary elements of the program is the wigwam, which is as close to an authentic replica as possible. Birch bark makes up the shelter's ceiling and walls, and the wigwam is outfitted with bear and deer hides, grains, and squash. Students get to sample smoked fish, a staple of Native American life.

"Hunting and fishing were a way of surviving," MacKenzie notes. "This is a great place to talk about current hunting and fishing management."

Another program highlight is getting to board a gundalow replica, a simple, flat-bottomed boat, specifically designed for moving cargo on the shallow Great Bay.

Showing how life on the estuary has changed over time, MacKenzie believes, is a great way to help children understand the role and value of natural resources, research, and environmental issues, such as water quality.

"You can teach anything you want using cultural history," she adds. "Historically, what has always drawn people to an area has been the abundant natural resources. . . What it all boils down to really is a healthy ecosystem." ❖

For more information on the Great Bay Fall Cultural History Program, contact Kelle MacKenzie at (603) 778-0015 or kelle@greatbay.org.

Ideas for the Next Issue

Do you find the articles in *Coastal Services* interesting? Do they cover the topics that are relevant to your job? Have they generated ideas, or provided helpful resources?

In every edition of *Coastal Services*, the publication's writers and editors strive to highlight information about coastal resource management issues and successful management programs as a way to help the nation's coastal managers communicate with and learn from each other.

Now is your chance to tell us how we are doing.

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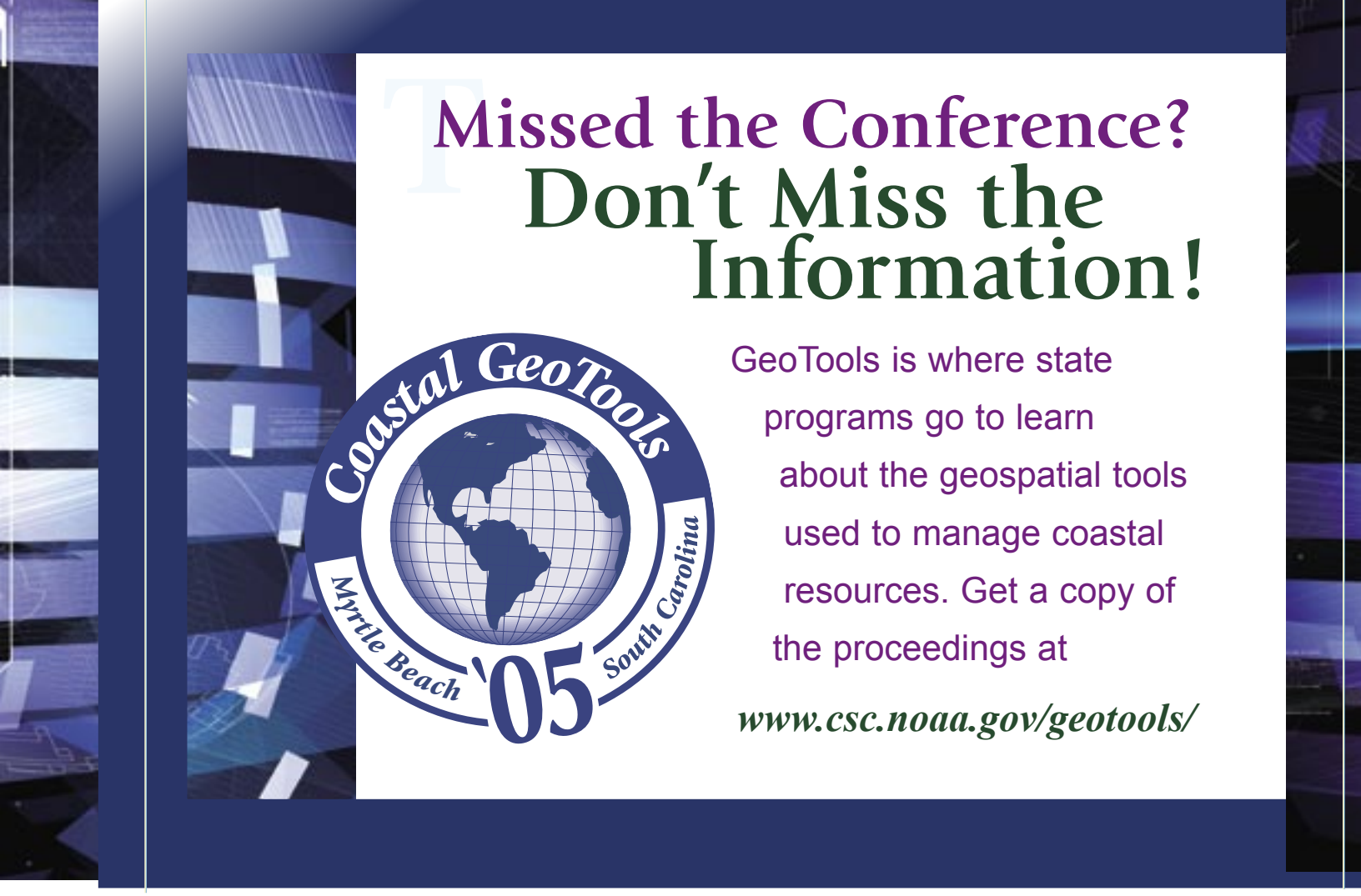
The magazine provides profiles of programs that coastal managers can use to educate their agencies and constituents. The *Coastal Connections* newsletter focuses on coastal management tools and techniques.

This spring, representatives from StrategyOne, a Washington D.C.-based public opinion research agency, will be contacting subscribers to find out how these publications can better meet their needs. As part of this effort, you may be contacted to fill out a survey questionnaire or to take part in a telephone interview.

We would like to thank you in advance for taking the time to participate. Your responses will help make sure *Coastal Services* and *Coastal Connections* contain the information you want to read.



Missed the Conference? Don't Miss the Information!

Coastal GeoTools
Myrtle Beach '05 South Carolina

GeoTools is where state programs go to learn about the geospatial tools used to manage coastal resources. Get a copy of the proceedings at

www.csc.noaa.gov/geotools/

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PERMIT NO. G-19

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA