

# COASTAL SERVICES

VOLUME 14, ISSUE 1 • JANUARY/FEBRUARY 2011

LINKING PEOPLE, INFORMATION, AND TECHNOLOGY



## **MARINE SPATIAL PLANNING: Rhode Island Puts Its Unique SAMP on Ocean Management**

**Guiding Homeowners to Reduce  
Their Risks from Natural Hazards**

**“Caching” In on the Natural Resources  
of the Great Lakes**



## From the Director

Since 1980, special area management plans (SAMPs) have been a tool used around the country to address problems in distinct areas that go beyond what can be addressed by existing local, state, and federal policies.

Last October, Rhode Island coastal resource managers adopted the nation's first SAMP to address ocean management, which is the focus of the cover story of this edition of *Coastal Services*.

In addition to identifying areas that merit special protection, Rhode Island's Ocean SAMP designates areas in the state's offshore waters as being appropriate for renewable energy and goes so far as to suggest a suitable site in nearby waters under federal jurisdiction.

Rhode Island's efforts mesh nicely with a recent national policy directive that will help ensure that America's oceans remain healthy, productive, and secure for this and future generations. On July 19, 2010, President Obama adopted the first National Ocean Policy for the U.S. and the *Final Recommendations of the Interagency Ocean Policy Task Force*.

This historic policy directive shifts ocean management from a single-sector and single-species focus toward comprehensive coastal and marine spatial planning, which provides an objective, science-based, and transparent way for society to

determine how specific areas of the ocean are to be used and conserved on a regional scale.

Coastal and marine spatial planning transcends traditional sectors, jurisdictions, geographies, and constituencies by taking a holistic approach to comprehensive planning and management.

Rhode Island's efforts are just one of the examples of how states are implementing coastal and marine spatial planning featured in NOAA's Coastal and Marine Spatial Planning website, [www.cmsp.noaa.gov](http://www.cmsp.noaa.gov).

Developed by the Coastal Services Center and NOAA partners, the website also features resources and information related to the principles of coastal and marine spatial planning.

Other stories in this edition of *Coastal Services* look at handbooks that are helping homeowners in Hawaii and Mississippi reduce their risks from natural hazards, a geocache trail that has visitors flocking to the Great Lakes Seaway Trail, and a new online toolkit that is helping coral reef managers keep up with the latest science and best management practices.

I wish you all a very happy and productive 2011. ❖



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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*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

### Obtaining Private-Sector Services Made Easier

Most governmental organizations contract with private-sector firms for various services, but the cost in time and paperwork can be high.

NOAA has lessened these issues by establishing two contract vehicles that provide access to several private-sector firms; one covers geospatial services and data, and the other pertains to social science-related services. Organizations within NOAA and other federal, state, or local governmental entities can use these contracts instead of creating their own. Participating vendors, who are the top companies in their fields, then compete for jobs.

To use the contracts, the following requirements must be met.

- All work must be done to facilitate the management and protection of coastal communities and natural resources.
- Participants must be governmental organizations.
- A memorandum of understanding with the NOAA Coastal Services Center must be in place before the contracting vehicle is used.

Using these contracts reduces paperwork, saves time, and may result in a better scope of work request, since assistance with project scoping is available.

#### Coastal Geospatial Services Contract Vehicle

This contract provides access to the geospatial industry's top performers—over 70 subcontractors available through four prime contractors. Each of the four contractors has a \$17.5 million ceiling for the life of the five-year contract, which means the contracts are classified as indefinite delivery, indefinite quantity (IDIQ) multiple-year task order contracts.

A memorandum of understanding with NOAA is required. Contract management and limited technical

consultation are provided at no cost. Individual task orders are managed using a Web-based system that allows the contractors and the government to monitor and document contract and contractor performance. Task orders can be awarded particularly fast in times of natural disasters.

Services available from the coastal geospatial services contract include thematic mapping, aircraft-acquired data, satellite imagery, aerial photo interpretation, GIS tool development, data analysis, acoustic data, sediment profiling, and high-resolution topographic and bathymetric data.

#### Social Sciences Contract Vehicle

Two contractors, Eastern Research Group, Inc., and Booz Allen Hamilton, Inc., were competitively selected for this multiple-award, five-year contracting vehicle. Requests for services result in bids from these two contractors to be awarded the work.

Currently the greatest time savings when using this contract are realized by federal entities. Federal organizations outside of NOAA will first need to establish an interagency agreement with the NOAA Coastal Services Center.

Services provided through this contract include audience analysis, facilitation, social assessment, policy analysis, economic impact and feasibility studies, evaluation, focus group design and implementation, performance measures, nonmarket valuation, community-based social marketing, and survey design.

After the task request is placed in the system, the award is usually made within a month's time. ❖

To learn about and access these services, visit [www.csc.noaa.gov/idiq/](http://www.csc.noaa.gov/idiq/).

# Guiding Homeowners to Reduce Their Risks from Natural Hazards

When preparing coastal communities for natural hazards, there is only so much that government can do. Homeowners must play a role in protecting their homes and families from the risks of natural hazards, such as hurricanes and floods.

To help reduce potential property damage and risk to human life, coastal managers in Mississippi created an easy-to-use guide to help property owners navigate tasks such as gathering emergency supplies, strengthening their homes, and obtaining different kinds of insurance that can aid in recovery.

Modeled after a similar guide developed in Hawaii, the *Mississippi Homeowners Handbook to Prepare for Natural Hazards* is the first in a series of guides being developed by states in the Gulf of Mexico. Alabama is set to release its guide in February.

"The guide contains all the essential information that homeowners need to help reduce the risks to their family and property," says Tracie Sempier, coastal storms outreach coordinator for the Mississippi-Alabama Sea Grant Consortium. "It's an important reference of all the things they can do to be prepared."

"Hopefully many coastal—and even inland—states will consider doing them," says Dennis Hwang, extension faculty member for the University of Hawaii Sea Grant College Program and one of the

creator's of Hawaii's guidebook. "Now that these are getting going in the Gulf, we would love to see them propagate."

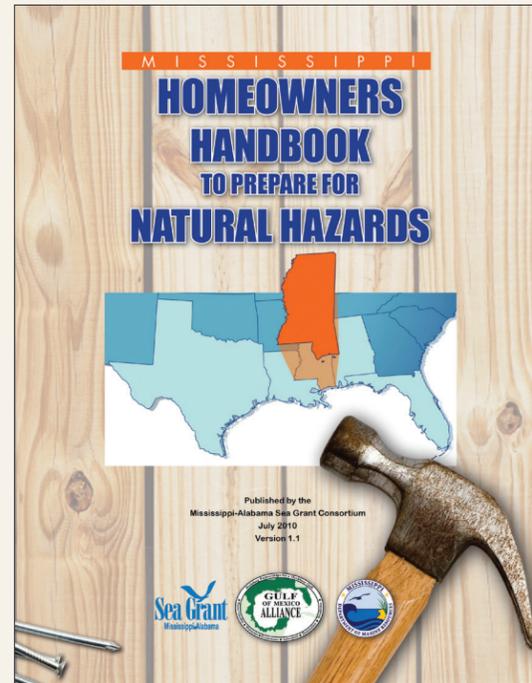
## Weakest Links

Hwang says he would like to see as many states as possible create the guidebooks because "homeowners are really one of the weakest links in terms of preparations for natural hazards. Government can do a lot of preparation and planning, but if homeowners are not prepared, when there is an event the government will be overwhelmed."

While there is a lot of technical information available on preparing for natural hazards, he says most of it is not directly relevant to homeowners.

"The purpose of our book," Hwang says, "was to go through all the source material and decipher and interpret it into the easiest things homeowners can do to prepare themselves for natural hazards. It does as much homework for the homeowner as possible."

Hawaii's *Homeowner's Handbook to Prepare for Natural Hazards* was published in 2007 and has already gone through four print runs with over 35,000 copies.



## Gulf-Wide

Two years ago, the Gulf of Mexico Alliance (GOMA) Coastal Community Resilience Team was looking for a project, notes Rhonda Price, team coordinator and GOMA resiliency coordinator, who is housed at the Mississippi Department of Marine Resources.

"We felt like we needed something after Katrina to help homeowners be better prepared," Price says, "but we didn't want another book that was going to get lost on a shelf. We wanted a resource tool that would provide vital information that would get used and assist coastal communities with recovery."

*"We felt like we needed something after Katrina to help homeowners be better prepared."*

Rhonda Price,  
Gulf of Mexico Alliance

When staff members from the Hawaii Sea Grant Program shared their homeowner's handbook, the team decided to take the concept Gulf-wide, with each state developing its own guidebook, Price says.

## Model Effort

With guidance from Hawaii Sea Grant, Mississippi took the lead in the handbooks' creation in the Gulf.

The first thing state project partners did was go through the table of contents of Hawaii's guidebook and identify relevant information for Mississippi.

"We modified the information a bit to work within our state," Price explains. "For instance, we don't have tsunamis or earthquakes, so we took those out and adjusted ours to include tornadoes."

They then created a list of technical partners, such as representatives from the power company and state emergency managers, who could vet the guidebook's information and help make it relevant to Mississippi homeowners, Sempier says. A technical writer was hired to compile the information and rewrite the sections of the book.

Hawaii Sea Grant provided many of the graphics from its publication for Mississippi's use.

"Once designed, we went through several rounds of technical edits before we felt like we had the information in there the best way possible," Sempier says.

## Good Reception

The guidebook was completed in July 2010. Most of the initial 5,000 that were printed have been distributed, and a joint marketing effort will be conducted with Alabama at the beginning of hurricane season in June, Sempier says.

"We've already gotten a good reception from it," says Tina Shumate, director of the Office of Coastal Management and Planning in the Mississippi Department of Marine Resources, and chair of the GOMA Coastal Community Resilience Team. "People recognize that this is a great product."

The NOAA Coastal Storms Program is helping to fund Mississippi's and Alabama's efforts.

## Similar Process

The other Gulf states will follow a similar process when developing their guides, Price says.

"With a concentrated effort," Hwang says, "most states would be able to do a guidebook in a year, from start to finish."

He says the keys to developing the guides include having a lead agency or group spearheading the effort, developing technical partners to review the information and provide support, spending adequate time writing, designing, and editing

the book, and then creating a plan for distribution.

"Hopefully," adds Hwang, "as different states develop these, we will create a network where we can learn from each other about the best methods for helping homeowners."

## Paying It Forward

Just as Hawaii helped Mississippi develop its guidebook, Price and Sempier say they would be willing to assist others with their efforts.

"We'd be more than willing to help others develop handbooks for their states," Sempier says. "It was much easier for us to go through the process having Hawaii as a model. The main information is there; it just has to be tailored to the specific needs of your state and fill in some local examples."

Price adds, "It's important to talk to the states that have done it. If someone calls, we would be more than willing to help." ❖

To view the *Mississippi Homeowners Handbook to Prepare for Natural Hazards*, go to <http://ms.stormsmartcoasts.org/handbook/>. For more information, contact Tracie Sempier at (228) 818-8829, or [tracie.sempier@usm.edu](mailto:tracie.sempier@usm.edu), Tina Shumate at (228) 216-4201, or [tina.shumate@dmr.ms.gov](mailto:tina.shumate@dmr.ms.gov), or Rhonda Price at (228) 374-5000, or [rhonda.price@dmr.ms.gov](mailto:rhonda.price@dmr.ms.gov). To view Hawaii's handbook, go to [www.soest.hawaii.edu/SEAGRANT/communication/NaturalHazardsHandbook/updated\\_Handbook\\_web.pdf](http://www.soest.hawaii.edu/SEAGRANT/communication/NaturalHazardsHandbook/updated_Handbook_web.pdf). For more information, you may contact Dennis Hwang at (808) 544-8608, or [djh@opglaw.com](mailto:djh@opglaw.com).



# Marine Spatial Planning: Rhode Island Puts Its Unique SAMP on Ocean Management

Since 1983, Rhode Island coastal resource managers have successfully developed six special area management plans (SAMPs) to deal with a wide variety of issues, including watershed and resource management, economic development, and hazards.

Recently, managers in that state adopted the nation's first SAMP to address ocean management.

"Rhode Island is at the forefront in our national effort to better manage our ocean environment," says Grover Fugate, executive director of the Rhode Island Coastal Resources Management Council (CRMC). "No other state in the nation has attempted such a comprehensive and ambitious marine spatial planning effort to understand and plan for ocean resources."

In addition to identifying areas that merit special protection, Rhode Island's Ocean SAMP designates areas in the state's offshore waters as being appropriate for renewable energy and goes so far as to suggest a suitable site in nearby waters under federal jurisdiction.

The plan includes comprehensive new regulatory standards for offshore development that Fugate believes will make Rhode Island a leader in managing offshore renewable energy.

The Ocean SAMP also protects current uses and habitats through

zones for commercial fishing; critical habitats for fish, marine animals, and birds; marine transportation; and more.

Adopted by the CRMC on October 19, 2010, the plan is awaiting final approval from NOAA.

## Defining a SAMP

Special area management plans are loosely defined in a single sentence of a 1980 amendment to the Coastal Zone Management Act. Coastal managers use SAMPs when the problems in a distinct area go beyond what can be addressed by existing local, state, and federal policies.

Around the country, SAMPs have been developed to deal with a wide variety of issues, such as water quality, coastal habitats, endangered species, economic revitalization, and preserving cultural resources.

Benefits of their implementation include better resource protection, tailored regulations, more predictability in governmental decision-making, and improved relationships between stakeholders and regulators.

## Previous Experience

For Rhode Island, SAMPs have been an "important tool that relies on both science and public input to help us develop strategies to protect and manage our ocean and coastal resources," says Fugate.

As part of its previous SAMP work, the CRMC applied marine spatial planning techniques to zone all the waters off the state of Rhode Island into six water types.

The Ocean SAMP built on this previous work by further refining offshore zones and providing for a renewable resource zone in the offshore environment.

## Large and Ambitious

Although the Ocean SAMP was "much larger and more ambitious" than the state's previous SAMP efforts, Fugate says the CRMC used the "same marine spatial planning techniques to create a plan to effectively manage Rhode Island's offshore waters."

He adds, "We used the best available science and worked with well-informed and committed stakeholders, researchers, environmental and civic organizations, federal, state, and local agencies, and the Narragansett Tribe."

The resulting Ocean SAMP provides a "comprehensive understanding of this complex and rich ecosystem, as well as describes how the people living in this region have long used and depended upon these offshore resources," Fugate says. "It gives us a scientific guide to balance environmental protections with economic development objectives."

*"It gives us a scientific guide to balance environmental protections with economic development objectives."*

*Grover Fugate, Rhode Island Coastal Resources Management Council*

## Government Mandate

In 2005, Fugate says the CRMC recognized that the uses of marine resources in Rhode Island were intensifying, with looming issues such as offshore aquaculture, liquefied natural gas, resource extraction, and offshore energy.

In 2007, with a government mandate that offshore wind resources provide 15 percent of the state's electrical power by 2020, the Rhode Island Office of Energy Resources came to the CRMC with its eye on several potential sites for wind farms.

"We told them that given what we know, that was not the best solution to the problem," Fugate says. In response, the CRMC proposed the creation of an Ocean SAMP.

Work on the Ocean SAMP began in December of 2007. Two years and more than \$8 million later, Rhode Island is now the first state in the nation to have zoned its offshore waters for diverse activities, including renewable energy development.

## Within Boundaries

The Ocean SAMP study boundary includes approximately 1,500 square miles of portions of Block Island Sound, Rhode Island Sound, and the Atlantic Ocean.

The study area, which extends 30 miles offshore, includes both state and federal waters and abuts the state waters of Massachusetts, Connecticut, and New York.

Fugate says issues that had to be addressed included commercial and recreational fisheries; the vessels transporting people and cargo to area ports and harbors; and migratory fish, marine mammals, birds, and sea turtles that travel throughout the region. Additional studies included mapping ocean floor geology and collecting data about cultural resources and physical oceanography.

In addition to increased marine transportation traffic, issues facing the area include the impacts of climate change and the need for renewable energy infrastructure.

## Data Gathering

One of the biggest challenges of the SAMP process, Fugate says, was gathering the extensive amount of data needed to shed light on all the issues and turning them into usable geographic information system (GIS) layers.

"The federal agencies wanted three years of data," Fugate says. "We knew we needed to get the resources to commit to getting a three-year data set and then

gathering all the existing data we could get our hands on."

A wide array of existing data was collected, including European research, area environmental impact statements conducted for other projects, information from the U.S. Department of Defense on ordinance sites, and details about recreational boat races.

Fugate notes that research for much of the marine area did not exist and is expensive to conduct. "We decided to try to be smart about how we did this, and we focused our efforts on doing detailed research in specific areas and then conducting a tiered analysis."

In addition to the board and staff of the CRMC, the Ocean SAMP management team included the University of Rhode Island Graduate School of Oceanography and Rhode Island Sea Grant, and was supported by a stakeholder group, technical advisory committee, and science advisory task force.

## Model Effort

"It's been exhausting, but I'm very proud of it," Fugate says. "We were able to complete this massive study on time, on budget, while maintaining the highest academic standards, and including robust stakeholder involvement."

He adds, "We don't have all the answers, but I think the whole process is a model for other states." ❖

To read the Rhode Island Ocean SAMP, go to <http://seagrant.gso.uri.edu/oceansamp/>. For more information, you may contact Grover Fugate at (401) 783-7112, or [gfugate@crmc.ri.gov](mailto:gfugate@crmc.ri.gov).

# “Caching” In on the Natural Resources of the Great Lakes

What if coastal resource managers could bring a new group of technologically savvy visitors to their coastal areas who would pump money into local communities and be open to learning about natural, cultural, and historic resources?

Coastal managers in New York and Pennsylvania feel they have done just that by installing 75 geocaches along the 518-mile Great Lakes Seaway Trail, one of America’s National Scenic Byways and a National Recreation Trail.

Geocaching is a treasure hunt where visitors find previously hidden caches with a Global Positioning System (GPS) device.

The Seaway Trail’s new GeoTrail, which opened in August 2010, “provides a recreational, historic, cultural, and outdoor adventure for travelers,” says Teresa Mitchell, president and CEO of Seaway Trail, Inc. “It’s a way for people to see more and learn more about what’s along the Scenic Byway.”

“I think as coastal managers we can look at geocaching as a really unique opportunity,” says Dave White, recreation and tourism specialist for New York Sea Grant. “It’s bringing in a new and often younger audience who spend time learning about and understanding the environmental and cultural

resources where the caches are hidden.”

“This is a fabulous way to drive new travelers into our shoreline communities and their accommodations, restaurants,

shops, and services,” notes Kurt Schumacher, Great Lakes Seaway Trail project manager.

## Adventure Seekers

Geocaching is often described as a “game of high-tech hide and seek” played throughout the world by adventure seekers equipped with GPS or other navigational devices. The basic idea is to locate hidden containers outdoors and then share the experience online.

The primary geocaching website, *Geocaching.com*, reports that there are more than 4 million geocachers worldwide.

The website publishes the GPS coordinates for and provides information about geocaching sites. When a cache—usually a large plastic storage container or an ammo box—is located, finders enter their names in the logbook inside. Caches can also contain items for trading, usually toys or trinkets of little value.

## Coin Collecting

At least 10 ammo boxes emblazoned with the new Great Lakes Seaway Trail logo have been placed in each of five regions along the route, which parallels the freshwater shorelines of New York and Pennsylvania.

Each Seaway Trail cache has a uniquely shaped punch that cachers use to mark their logbooks. Once participants find 10 caches

“As a new market niche, geocachers are looking for places to go.”

Dave White,  
New York Sea Grant

in a region, they can have their logbook validated at an area tourist information center to receive a distinctive Great Lakes Seaway Trail GeoCoin for that region. A total of five coins can be collected along the GeoTrail.

Schumacher says they seeded the tradable items in the cache boxes with guidebooks and area tourism information.

## Expert Guided

Developing the GeoTrail was not overly complicated, Schumacher says, but it did take a lot of time and effort. To make sure they did it right, they hired a consultant to coordinate the trail’s development.

One of the biggest challenges, Schumacher says, was finding volunteers to help place the containers along the 500-plus-mile route and continually monitor them to ensure they aren’t misplaced or stolen.

“We recruited experienced geocachers and gave them directions to select places for the containers in scenic, historic, and culturally significant spots,” he says. The volunteers wrote proposals for their choices, which were reviewed to ensure the sites were in prime areas of interest, were adequately spread

out geographically, and wouldn’t cause any environmental harm.

“You want to showcase what’s unique to your region and educate geocachers about the need to be good stewards of those resources,” Mitchell says.

Permits were required to place the geocaches at historic locations or in state parks.

A grant from the Federal Highway Administration and sponsorships from local tourism agencies were used to fund the GeoTrail’s development.

## Exceeding Expectations

Two months after the GeoTrail’s launch, more than 1,000 coins had been given to geocachers who had found at least ten caches in a region. “We only ordered 2,500 coins last year, and if this level of use continues, we’ll be out by early spring,” says Schumacher, who is already planning to order more coins.

Before receiving the collectible coin, geocachers are asked to fill out a survey that will help measure the economic impact of the trail. “We have hard data from the survey,” Schumacher says, “including how many days they spent in the area, how much money they spent, and where they are coming from.”

They can also track the traffic on the Seaway Trail’s pages on *Geocaching.com*. “We can see from the website how many people are finding each individual cache,” he says.

According to the survey, most of the people seeking caches along the GeoTrail thus far are from the Northeast and are spending two to three days in a region. Most are

planning to take about two weeks to do the whole trail. After only two months, geocachers had spent about \$80,000 and were projected to spend \$210,000 before the initial stock of GeoCoins would be depleted.

“It’s exceeded our expectations,” Schumacher says. “Many of these people say they wouldn’t have come here if it wasn’t for the GeoTrail, and many are already planning to come back.”

## New Market

“As a new market niche, geocachers are looking for places to go,” White says. “Coastal managers have the opportunity and structure to provide access, while training people to come to their resource and leave it better than it was.”

White advises coastal managers interested in geocaching to think about “providing the opportunity in a sustainable, environmental way, and if the area can provide the resources that geocachers would need,” such as lodging and meals.

Schumacher says he is “extremely proud” of the trail they have created. “It’s been good for the region and good for the Great Lakes Seaway Trail.” ❖

For more information on geocaching, go to [www.geocaching.com](http://www.geocaching.com). For more information on the Great Lakes Seaway Trail GeoTrail, go to [www.seawaytrail.com/geotrail/](http://www.seawaytrail.com/geotrail/). You may also contact Kurt Schumacher at (585) 857-1004, or [kurt@seawaytrail.com](mailto:kurt@seawaytrail.com), Teresa Mitchell at (315) 646-1000, ext. 202, or [teresa@seawaytrail.com](mailto:teresa@seawaytrail.com), or Dave White at (315) 312-3042, or [dgw9@cornell.edu](mailto:dgw9@cornell.edu).



## Creating More Resilient Coral Reefs with Online Toolkit



Coral reef managers can now keep up with the latest science and best management practices with a click of a mouse. The resources are all part of a new online toolkit created by The Nature Conservancy.

"This is a body of resources that we have compiled for coral reef managers that are meant to make their jobs easier on a number of fronts," says Stephanie Wear, director of coral reef conservation at The Nature Conservancy. "We're keeping up with the latest science and best management practices so that coral reef managers don't have to."

The Reef Resilience Toolkit provides managers with information on building resilience to climate change into the design of marine protected areas (MPA) and their daily management activities.

"This is a body of resources, not step-by-step guidance," Wear says. "We're helping managers develop strategies based on the new science coming out to increase the likelihood that coral reefs will survive a warming or bleaching event."

### Climate Change Impacts

A coral bleaching event means that these normally colorful ecosystems are being subjected to starvation and could face disease, and even death. The primary culprit, scientists say, is rising sea temperatures fueled by climate change.

In 1997 and 1998, coral reefs worldwide bleached for the first time, killing about 16 percent of those reefs. Afterwards, scientists began discussions about why some corals survived while others died.

*"We've taken what we now know and put it into much clearer management recommendations."*

*Stephanie Wear,  
The Nature Conservancy*

### Why Corals Survived

In 2003, The Nature Conservancy put up the first version of the toolkit, which was an "assemblage of hypotheses of why corals survived," Wear says. That resource has since been revamped several times, with the current Reef Resilience Toolkit being the latest iteration.

"It's been entirely overhauled," Wear says. "Since that first bleaching event, we've learned a lot and there's been a lot of science focused on this problem. We've taken what we now know and put it into much clearer management recommendations."

### Distilling It Down

The toolkit is divided into two modules, Coral Reefs and Fish Spawning Aggregations. Each module begins with introductory information defining a problem and providing background about the system and issues.

There are also sections that provide specific guidelines on

implementing resilience-based management. For example, the introduction to the coral reefs module focuses on the problem of climate change and coral bleaching, followed by guidance on how to design MPAs and networks to anticipate climate change.

There are also sections introducing the relatively new concept of reef resilience and providing 20 case studies from around the world. Online training and additional resources are featured, as are links to newsletters, webinars, and science blogs. The toolkit is available on CD-ROM for those with slow Internet connections.

Since March 2010, 540 people have enrolled in the interactive online course, which is jointly sponsored by the conservancy and the NOAA Coral Reef Watch Program. Wear says that so far the toolkit is being used in 70 countries.

"This product is a compilation of work coming from many organizations," Wear says. "We've taken that information and distilled it down to make it useful for managers all over the world."

She adds, "It's been really exciting to work with so many people in so many places and see how relevant this information is." ❖

To see the Reef Resilience Toolkit, go to [www.refresilience.org/home.html](http://www.refresilience.org/home.html). For more information, contact Stephanie Wear at (919) 381-2774, or [swear@tnc.org](mailto:swear@tnc.org).



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## Looking for a Few Good Candidates . . .

Application packages from fellowship candidates are due to local Sea Grant offices by January 28. Sea Grant nomination packages are due February 25.



**Coastal Management Fellowship Program**  
[www.csc.noaa.gov/fellowship/](http://www.csc.noaa.gov/fellowship/)

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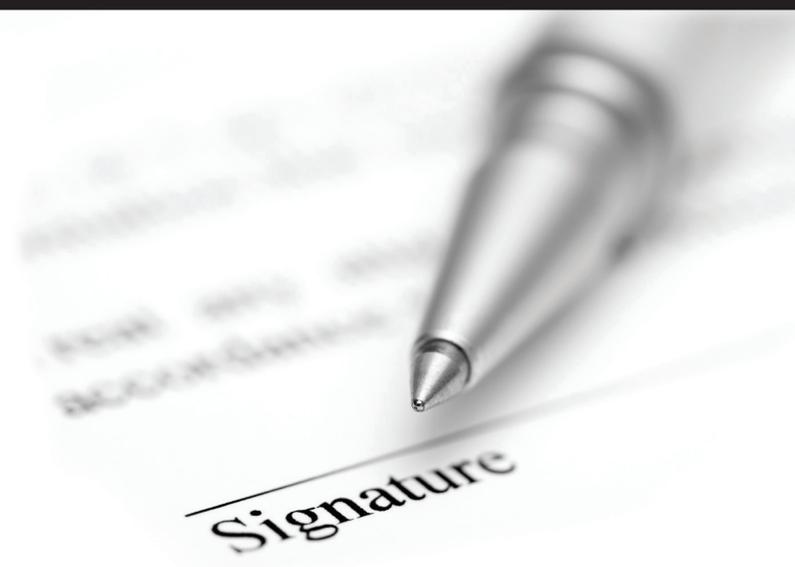


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