COASTAL CONNECTIONS

VOLUME 4, ISSUE 2 | A BIMONTHLY PUBLICATION FOCUSED ON TOOLS FOR COASTAL RESOURCE MANAGERS | APRIL / MAY 2006

COASTAL MANAGEMENT PROFILE

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Hometown: Ft. Myers, Florida
Education: BA in economics, Duke University; JD, University of Florida; LLM in environmental and natural resources law, Northwestern School of Law at Lewis and Clark College
Most fulfilling aspect of your job: Knowing I'm working to help conservation of our coasts and oceans.
Most challenging aspect of your job: Too much to do and not enough time.
One work-related accomplishment you're proud of: Worked in Florida to help get the bill passed that created the Florida Ocean Council; helped launch the Southeast Florida Coral Reef Initiative; began a comprehensive system-wide planning process for Florida's aquatic preserves; helped launch the Gulf of Mexico Alliance.
One personal accomplishment you're proud of: Amidst my

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THIS ISSUE'S FOCUS

COASTAL ECOSYSTEM RESTORATION

Restoration of degraded coastal ecosystems is a high priority throughout the coastal community. Coastal ecosystems make up less than 10 percent of the nation's total land area, but they support far greater proportions of living resources—including a high percentage of threatened and endangered species, fishery resources, and wintering waterfowl.

Over the past 30 years, the population of densely populated coastal watershed counties has continued to experience a fast rate of growth. Because of construction, employment, and human population, natural habitat has been degraded or lost, and plant and animal populations have rapidly declined.

Although it's a relatively young science, coastal ecosystem restoration is rapidly advancing, and coastal communities are learning from experience and the application of new technologies. Restoring ecosystems can be extremely complex, and even though each project is different, a systematic approach to coastal restoration can provide a blueprint for smart decision making (see figure below).

"Restoration by its nature is a manipulation—one that may be ineffective or even damaging to ecosystems when actions are not moderated by sound science and strong technical experience," according to Karen Gaffney, director of the Center for Ecological Restoration and Stewardship in Windsor, California.

By documenting a project from beginning to end, coastal managers can anticipate potential problems, learn from the unexpected, and improve on tools and methods. Such a systematic approach provides a framework to address the components involved in planning, implementing, assessing, adapting, and disseminating the best means of achieving healthy, sustainable ecosystems for present and future generations.

The five basic components of a systematic approach to coastal ecosystem restoration.

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busy jobs, I've always found time for my family.

Things you do in your spare time: Bike, jog, read, go to movies.

Family: Significant Other, David, is working on his PhD in archaeology and will be moving to D.C. next summer. Mom and dad live in St. Augustine, Florida. My brother and his family live in Houston, Texas.

Favorite movie: *Casablanca*; *Lord of the Rings* trilogy

"I grew up in Florida, fishing the salt flats of Estero sound with my dad and brother. My mom likes to say that I was raised with 'sand in my shoes' (which would have been true had I actually worn shoes growing up).

"After my various schools, I worked at the Florida Department of Environmental Protection (DEP) in the Office of General Counsel as an enforcement attorney. I then became DEP's Legislative Affairs counsel, which got me into the wonderful world of lobbying and advocacy.

"I then went to the Florida Chapter of The Nature Conservancy as the director of government relations. After doing that for a couple of years, I went back to DEP to become the director of Coastal and Aquatic Managed Areas (CAMA). CAMA was responsible for 41 aquatic preserves (the state-designated marine managed areas), three National Estuarine Research Reserves, and the Florida Keys National Marine Sanctuary, in partnership with NOAA.

"I took the CSO job in hopes of helping advance sound coastal and ocean policy and increase funding at the national level."

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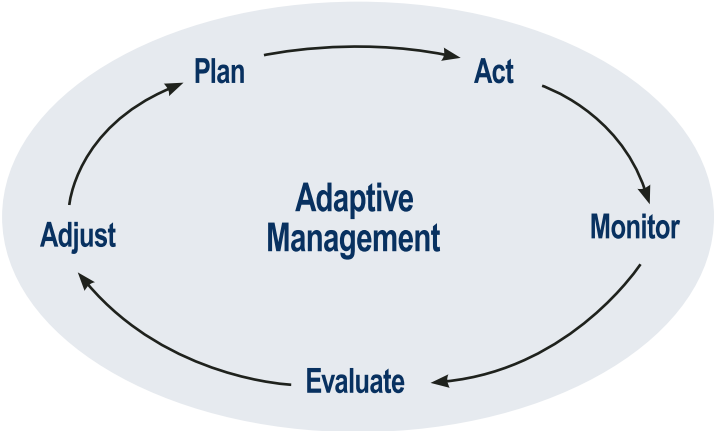

Applying the continual evaluation process of adaptive management leads to cost-effective, successful restoration projects.

The Planning and Implementation Process

The planning process is the foundation of a coastal restoration project. The better the planning, the more likely the project will yield positive results.

Developing conceptual models provides a way to understand the complexity of an ecosystem—including interacting processes, limiting factors, and various uncertainties—and this knowledge can then be incorporated into project planning and the analysis of options. These conceptual models clearly lay out what the primary drivers (or influences) are on the system, the attributes you want to restore to the system, and the ecological connections in between. Such models should facilitate selection of indicators to monitor in order to assess whether desired attributes are benefited by the restoration.

The process starts with a vision of goals and methods needed to restore an ecosystem. Coastal managers must then research all potential effects on system performance, and once restoration goals are stated and agreed upon, managers can formulate and clearly define specific planning objectives.

A systematic approach provides a means to plan for the unanticipated, develop a flexible strategy to handle varying conditions, and build a framework to prioritize tasks and eliminate duplication of effort. Before project implementation, managers must always develop goals, objectives, and a proposed timeline for a more cost- and time-efficient program.

Performance Assessment and Adaptive Management

To determine how the project is coming along, there must be a way of measuring progress and assessing performance. A systematic approach is extremely helpful in developing and implementing a monitoring plan. A clear, concise understanding of goals and performance criteria is critical to the success of a program. Monitoring programs should be carried out according to a schedule and should include a start date, the frequency and time of the year during which field studies will take place, and the end date for the program.

A systematic approach to this task enables a more rapid and flexible response to changing conditions so that when new information is discovered, problems can be addressed and actions modified.

"We, as restoration practitioners, need to embrace a comprehensive, science-based ecological restoration process that is guided by adaptive management in order to ensure that projects are successful, effective, and beneficial to the target ecosystems," says Gaffney.

Dissemination of Results to the Community

Public support is a critical component of coastal restoration projects, and there is substantial opportunity to engage, inform, and involve the community during all project phases. The public can be a valuable part of the planning process and can assist with implementation, monitoring, and maintenance tasks. Community involvement can also increase project support, participation, and long-term sustainable stewardship.

Information from a restoration project or program should be widely distributed in as many formats as possible to cultivate public support and to advance restoration science.

WHAT DOES THE CENTER DO?

Each year the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center joins with the NOAA Community-based Restoration Program and other NOAA offices to solicit project proposals for habitat restoration work. The Center provides decision-support tools to help identify and prioritize potential sites for restoration and develops tools and training programs that inform, educate, and inspire restoration action.

Proposals are sought through a *Federal Register* notice in June, and the Center works with grantees to develop and deliver these valuable services to the local restoration community. For additional information about the Center's ecosystem restoration projects, contact *Bethney.Ward@noaa.gov*, or visit *www.csc.noaa.gov/lcr/habitat.html*.

A few examples of Center restoration projects are featured below.

- **Lake St. Clair Coastal Habitat Assessment** – This assessment creates a framework for maintaining and restoring native biodiversity and landscapes, and for managing the quality of surface and groundwaters within Lake St. Clair and the surrounding watersheds. The framework was developed by the Great Lakes Commission and its partners. *www.glc.org/habitat/habplan.html*

- **Rhode Island Habitat Restoration Portal** – This Web site describes more than 100 potential restoration projects in Rhode Island and provides spatial data and tools for examining and prioritizing restoration opportunities, as well as background information on habitat restoration. The portal was developed by the Rhode Island Coastal Resources Management Council, Department of Environmental Management, and Save the Bay. *www.edc.uri.edu/restoration/*

- **Restoration Monitoring Planner** – The Center is working with the NOAA Community-based Restoration Program to assist restoration project grantees in developing science-based monitoring plans for their projects. This on-line tool results in actual monitoring plans that meet NOAA's monitoring requirements and that can be readily implemented by grantees.

IDENTIFYING THE AUDIENCE

To decide how information from restoration projects should be disseminated and to whom, the target audience must first be identified. Understanding the audience and its needs is critical. Those interested in the results of a restoration project may include beachgoers, birders and amateur naturalists, fishermen, sportsmen, industry representatives, engineers, government environmental managers, politicians, state and federal agencies, scientists, volunteers, and others.

Some examples of audience members and the reasons for their interest are as follows:

Developers and managers
- Is the project succeeding?
- In what ways do we need to adjust the project?
- How can we minimize cost and maximize performance?

Scientists and planners
- What can we learn that will help us to do things better?
- How does performance fit predictions?

Resource users
- Is the resource benefiting?
- Is the public benefiting?
- Are adjacent areas positively or negatively affected?

Information courtesy of www.csc.noaa.gov/coastal/.

Coastal Connections is a publication of the National Oceanic and Atmospheric Administration Coastal Services Center, produced for the coastal resource management community. Each issue of this free bimonthly newsletter focuses on a tool, information resource, or methodology of interest to the nation's coastal resource managers.

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

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NOAA/CSC/20613-PUB

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NEWS AND NOTES

Conference for Floodplain Managers

The Association of State Floodplain Managers will hold its annual conference from June 11 through 16 in Albuquerque, New Mexico. Several sessions will be coast-specific, including a workshop on coastal initiatives headed by the NOAA Coastal Services Center. To learn more about the conference, visit *www.floods.org/Conferences,%20Calendar/albuquerque.asp.*

NOAA Offers New Educational Discovery Kit on Nonpoint Source Pollution

A new on-line educational product, The Nonpoint Source Pollution Discovery Kit, explains the history and types of pollution, the differences between point and nonpoint sources, and the ways scientists monitor, assess, and control nonpoint source pollution. This on-line educational product is one of five Web-based discovery kits from NOAA's National Ocean Service. The Nonpoint Source Pollution Discovery Kit is available at *http://oceanservice.noaa.gov/education/kits/pollution/welcome.html.*

Helpful Disaster-Related Information

Flood Insurance Rate Maps are available on-line at *www.fema.gov.* Users can click on the Federal Emergency Management Agency's Flood Map Store link on the left side of the page and search by address and jurisdiction. The Emergency Management Institute offers many on-line courses and materials that present information on different disaster types. For more information, visit *http://training.fema.gov/EMIWeb/.*

Transitions

John "Jack" Dunnigan has been named assistant administrator for NOAA's National Ocean Service… **Ron Baird**, director, National Sea Grant Program, has announced his retirement; **Leon Cammen** is prepared to step up as acting director… **Bruce Carlisle** has been named assistant director for the Massachusetts Office of Coastal Zone Management… **Dave Zilkoski** has been selected to become the new director of the Office of National Geodetic Survey… **Charlie Evans,** program manager of the Connecticut Coastal Management Program, has announced his retirement… **Debra Hernandez**, director of program and policy development, and **Steve Moore**, director of the coastal planning division, are leaving the South Carolina Office of Ocean and Coastal Resource Management.

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