

# INSIDE SEA GRANT

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## S.C. Sea Grant Board of Directors elects Ingle as chair

Dr. Ronald R. Ingle, president of Coastal Carolina University, has been elected chair of the S.C. Sea Grant Consortium's Board of Directors. Ingle begins his one-year term on Jan. 1, 2002.

Ingle, a South Carolina native, is Coastal Carolina University's first president. Prior to his appointment at Coastal Carolina, he was associate dean of the College of Applied and Professional Sciences at the University of South Carolina-Columbia. A tenured professor of psychology, Ingle has published numerous professional articles.



Dr. Ronald Ingle

"The work conducted through the S.C. Sea Grant Consortium is integral to the future of our state," Ingle said. "It is critical that we join hands across South Carolina to identify, preserve, and protect the environments and cultural treasures which are unique to the coastal areas of South Carolina. I am particularly proud that Coastal Carolina University has been involved in these important activities since 1993."

## Researchers rip apart houses for science

Building on what they've learned from three years of Sea Grant laboratory research, Clemson University engineers ripped apart 15 flood-damaged houses last summer,

using devices from high-tech crowbars to a 35-ton crane to test hurricane-resistant retrofits. The test houses ranged from brick ranch to wooden two-story, all damaged by high water in Hurricane Floyd and slated for destruction in Horry County.

Tim Reinhold, Clemson civil engineering professor, and his team of five students made side-by-side comparisons of retrofitted and non-retrofitted roofs and walls to determine what works best and can be installed most easily by contractors in the field.

The project is a partnership among Clemson, Horry County, the South Carolina Department of Insurance, the Institute for Business & Home Safety (IBHS), the Horry-Georgetown Homebuilders Association, and local building officials from Horry County, Conway, and Myrtle Beach.

## Coastal Heritage wins awards

APEX 2001 recently bestowed a prestigious Grand Award to the S.C. Sea Grant communications team for *Coastal Heritage*. Of 724 magazine and journal entries submitted nationwide, *Coastal Heritage* was one of six entries chosen to receive the Grand Award.

An issue of *Coastal Heritage* containing the Consortium's five-year report also garnered an Award of Excellence for printed annual reports.

*Inside Sea Grant* is published two times a year to inform interested constituents about opportunities, activities, goals and accomplishments of the S.C. Sea Grant Consortium.

S.C. Sea Grant Consortium is a university-based network supporting research, education, and outreach to conserve coastal resources and enhance economic opportunity for the people of South Carolina.

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The study is an outgrowth of a three-year project funded by the S.C. Sea Grant Consortium to evaluate retrofit options that could provide significant improvements in resistance of buildings to severe winds.

The test homes are among the 29 homes bought as part of FEMA's repetitive flood buyout program in Horry County. The land must be returned to an undeveloped state to meet the requirements of the FEMA buyout program.

The Conway experiments will also provide valuable data for an 18-month research project funded by the National Sea Grant Technology Initiative that began in October 2001. Reinhold is collaborating with Elizabeth Judge, S.C. Sea Grant Extension coastal hazard specialist, on a study of hazard-retrofit materials and techniques on occupied homes.

This fall, Sea Grant researchers will begin soliciting coastal homeowners to participate in the study. Then inspectors trained by Applied Research Associates (ARA) of Raleigh, N.C., will provide free, detailed wind-risk assessments of about 10 homes selected. Sea Grant researchers and ARA staff will recommend cost-effective hazard retrofitting for each house.

After researchers and homeowners discuss which retrofit techniques would cause the least disruption and which designs are most appealing, local homebuilders will implement the retrofits. Product manufacturers and industrial partners will share costs of materials.

"We're learning from the Conway research on empty houses about which retrofit materials and techniques are most effective and easiest to install," said Judge. "We'll apply what we've learned to occupied houses in the Sea Grant project."

During the retrofitting process, Judge will coordinate a series of workshops with homeowners. Homeowners will be asked which factors—cost, recent storm history, insurance rates—most influence their willingness to retrofit their homes.

This information could give builders, building officials, home inspectors, and homeowners new ideas for strengthening homes. The project will also offer researchers more exposure to practical constraints of the marketplace and the construction environment, said Judge.

## Accomplishments

### NEMO pays off with new ordinance adoption

The S.C. Nonpoint Education for Municipal Officials (NEMO) program helps local elected and appointed officials learn about various land-use strategies that can help protect water quality.

In response to NEMO program workshops and presentations, the City of Conway has adopted a new zoning ordinance requiring certain wetland plants to be planted in and around on-site retention ponds in new developments. These plants contribute to water-quality improvements, filtering pollutants and nutrients from runoff.

Recently, the city issued a zoning certificate and certificate of occupancy to the first project to comply with the new ordinance—South Carolina Employment Security Commission office at 200 Victory Lane.

"One effective way to work with the local land-use decisionmakers and help them do their jobs is through education," says **Cal Sawyer**, S.C. Sea Grant Extension Program environmental quality specialist and NEMO coordinator in South Carolina.

"NEMO offers real-world examples of how other municipalities are protecting natural resources, and offers information about the economic benefits these practices have on communities."

### NOAA grant awarded to state task group

The South Carolina Task Group on Harmful Algae is gearing up for another season of studying Harmful Algal Blooms (HABs). Aided by a new grant from the National Ocean Service (NOS), a division of the National Oceanic and Atmospheric Administration (NOAA), the project is titled "A proposed harmful algal bloom initiative for South Carolina." The grant will allow the task group to further assess the potential environmental impacts of red tides, *Pfiesteria*, and toxic algae. Members of the task

## s at a glance

group include representatives of S.C. Sea Grant Consortium, key federal and state environmental and health agencies, and universities.

The task group will determine the present distribution of harmful algae in S.C. estuaries; examine the environmental factors that favor HAB formation in South Carolina estuaries; establish a statewide surveillance system for HAB detection and response; expand communication and education efforts related to HABs; and implement new efforts to increase awareness of the HAB issue among resource managers, community officials, coastal users, and the general public.

Working together on the project are S.C. Sea Grant Consortium, S.C. Department of Natural Resources, University of South Carolina Belle W. Baruch Institute, and NOAA's National Ocean Service.

### Three win coastal management fellowships

Three students nominated by the S.C. Sea Grant Consortium have recently received Coastal Management Fellowships from the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center.

This fellowship provides on-the-job education and training opportunities for postgraduate students in coastal resource management policy and also provides specific technical assistance for state coastal resource management programs. The program matches highly qualified students with hosts around the U.S. in state coastal zone management (CZM) programs.

During her fellowship, **Katherine Ardizone** is working on a Michigan CZM project titled "Environmental Protection for Coastal Communities: A Guide for Local Governments."

Fellow **Peter Slavinsky** is collaborating with Maine's CZM Geological Survey on a project titled "Creating a Sustainable Beach Community at Camp Ellis."

For a Delaware CZM project, **Bonnie Willis** is working on a project called "Tracking and Monitoring System for Coastal Nonpoint Pollution Control Program."

### Beach Sweep/River Sweep volunteers fight weather to clean waterways

Strong winds, rain, and chilly temperatures didn't prevent over 7,000 committed volunteers from participating in the 2001 Beach Sweep/River Sweep. This year's cleanup—organized by the S.C. Sea Grant Consortium, S.C. Department of Natural Resources, and PalmettoPride, The Governor's Council on Beautification and Litter—collected nearly 35 tons of trash and debris from South Carolina's beaches and inland waterways. Last year's cleanup collected about 58 tons.

As part of the annual event, volunteers log their findings so organizers can determine the source of the litter. This year, as in past years, the number one item found along the coast was cigarette butts. The top item found on inland waterways was drink containers. Unusual items included an air conditioning system, a purse complete with wallet, an alarm clock, and a message in a bottle.

Since 1988, when S.C. Sea Grant first organized the event, more than 70,000 volunteers have collected over 600 tons of trash. The Sweep is held each year on the third Saturday in September in conjunction with the International Coastal Cleanup. Beach Sweep/River Sweep 2002 is scheduled for September 21. To volunteer, contact Susan Ferris at (843) 727-2080.

### Interactive Coast-A-Syst Web site now open

A new Web site has been developed to complement the program workbook "South Carolina Coast-A-Syst: An Environmental Risk-Assessment Guide for Protecting Coastal Water Quality." The site allows participants to interactively engage in risk assessments. South Carolina Coast-A-Syst is a S.C. Sea Grant Extension educational program initiated to help homeowners in coastal regions protect surface and ground water quality. To check out the site, visit <http://www.clemson.edu/sccoastasyst>. To order the program workbook, call Cal Sawyer, S.C. Sea Grant Extension Program specialist, at (843) 722-5940.

## S.C. SEA GRANT EXTENSION PROGRAM

S.C. Sea Grant Extension Program is a joint outreach program of Clemson University's Cooperative Extension Service and the S.C. Sea Grant Consortium.

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The Consortium's Board of Directors is composed of the chief executive officers of its member institutions.

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### *Message from the Executive Director:*

## Land-use decisions will shape our coastal landscape

In coastal South Carolina, land developed for retirement and resort communities and tourist attractions will be rapidly consumed over the next several decades. Associated resource impacts could be severe in localized areas. Projected changes to land use have the potential to markedly alter our natural landscape.



Rick DeVoe

Such challenges must be addressed in a broad context, and addressing them will require several approaches.

**Planning.** No formal mechanism currently exists whereby the state's natural resource, economic development, and infrastructure agencies coordinate their strategic planning activities. South Carolina needs to develop a comprehensive strategic plan that integrates environmental, economic, social, educational, and political considerations, and establishes a coordinated process to minimize economic development and natural resource conflicts and improve communication.

**Land-Use Decisions.** Responsibility for land-use decisions rests with local governments. Passage of the 1994 S.C. Local Government Comprehensive Planning Enabling Act required local jurisdictions to develop

comprehensive land use plans. Fifty separate comprehensive plans are now in place in the state's eight coastal counties. However, there are no provisions to ensure that these "comp" plans are coordinated with one another. Thus, there is a great need to establish mechanisms to ensure that these local "comp" plans are better integrated.

### **Need for Science-based Decision-making.**

Water management, including stormwater control, allocation, contaminant reduction, and pollution abatement, will drive management decisions for the next few decades. We must improve our scientific understanding of the relationships between land-use activities and environmental health. And we must develop and provide management strategies and "tools" based on accurate science-based predictions of impacts to state officials and local decision-makers to enable them to focus their limited resources on high-priority resource-management needs.

**Public Engagement.** In the end, public constituencies influence most growth and development decisions. Public understanding of the environmental issues associated with land-use change is lacking. A better informed public will demand environmentally enlightened decision making, which is crucial to ensuring a responsible balance between economic development and resource conservation in South Carolina.