



Using natural resources wisely



Increasing coastal flood and storm awareness



Making seafood safe



Conserving our biological resources



Enhancing our waterways



Treasuring our coastal species

Coastal Challenges —

DELAWARE SEA GRANT COLLEGE PROGRAM REPORTER



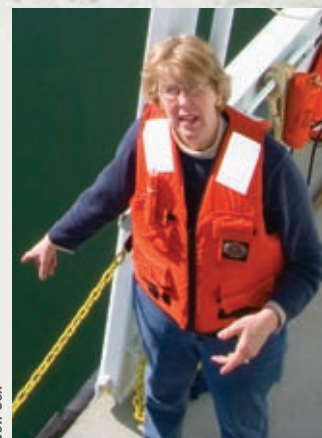
Sea Grant
Delaware

Coastal Solutions

Increasing what we know about the coastal environment...and ensuring the wise use of Delaware's coastal treasures

From Brandywine Creek's lush banks to Fenwick Island's quiet beaches, Delaware has an abundance of coastal treasures. We have a top port, world-class beaches, vibrant marshes, plentiful marine life, and communities rich with maritime heritage.

Our oceans and their productive coastal environments are important to our state and nation, affecting the lives of coastal as well as inland residents. These treasures benefit our health, support our economy, and provide for our everyday needs.



Nancy Targett, director of the Delaware Sea Grant College Program, aboard the University of Delaware research vessel R/V Hugh R. Sharp.

The very things that make our coast so appealing also put it under increasing pressure. We like to live at or visit the beach, eat seafood, and enjoy the natural beauty of the coast. But increased human populations in coastal areas are affecting water quality, seafood safety, and marine habitat integrity. Balancing our natural resources with these competing demands is a challenge.

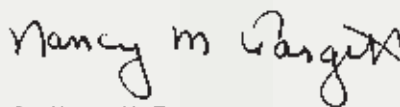
Delaware Sea Grant, which is housed at the University of Delaware's College of Marine and Earth Studies, is working to find solutions to such coastal challenges. Since its creation in 1976, the program has greatly increased our understanding of Delaware's coastal environment. Sea Grant researchers, outreach specialists, and students are discovering innovative ways for society to benefit from the sea — today and in the future.

This report highlights several efforts sponsored by Delaware Sea Grant over the past year. It identifies some of the pressing challenges facing our coast and discusses what we are doing to help solve these problems.

We can't do it alone, however...

Delaware Sea Grant is built on partnerships. Every day, we work with state and federal agencies, businesses, environmental organizations, and citizens to tackle our coastal challenges. The following pages highlight just a few of the many partners who team with us to better understand our coastal environment and the ways we can work together to ensure that coastal waters remain clean, healthy, and economically viable for our children and grandchildren.

I invite you to read this report and to go online at www.deseagrant.org/getinvolved to consider how you too might partner with us in finding solutions to our coastal challenges.



Dr. Nancy M. Targett
Director, Delaware Sea Grant College Program
Dean, University of Delaware College of Marine and Earth Studies

ADVISORY GROUP MEMBERS GUIDE SEA GRANT EFFORTS

The Delaware Sea Grant Advisory Council (SGAC) consists of members of the Delaware General Assembly and representatives from state and local government agencies, industry, nongovernmental organizations, and the education sector. Members serve staggered two-year renewable terms.

The SGAC provides valuable input on Delaware Sea Grant's research, outreach, and education projects. It is also a critical partner in the development of Delaware Sea Grant's strategic and implementation plans. When the SGAC reaches consensus regarding coastal priorities, it represents a strong mandate because of the diversity of constituents it represents.

The SGAC also facilitates partnerships and alliances for Delaware Sea Grant researchers, outreach specialists, and educators throughout the state and region.

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Using Natural Resources Wisely

As cities and towns grow, so do opportunities to ensure a clean and healthy Delaware

Survey studies alternative energy and tourism

Wind power might be a cost-effective renewable energy resource, but if the state erected an offshore wind farm, how would it affect beach tourism?

Delaware Sea Grant marine policy experts Jeremy Firestone and Willett Kempton recently surveyed 1,000 out-of-state visitors at Delaware beaches to find out. The survey will help determine what types of tourists a wind farm would deter, what types it would attract, and whether possibilities exist for economic development surrounding the tall white turbines. The team plans to publish preliminary results later this year.

"We want to know if there's a wind farm, would visitors still go to the same beach and would they take a boat tour of it," Firestone said. "There's a lot of speculation out there about the effects on tourism, but there's not a lot of good data."

Efforts help manage a growing population

Growth of Delaware's coastal communities is going to happen, says Jim Falk, director of Delaware Sea Grant's Marine Advisory Service. Sussex County alone is set to grow 62 percent by 2030. But by taking action, the state and its residents can limit impacts on the natural resources we all cherish.

To help mitigate impacts from growth — which range from loss of wildlife habitat to decreased water quality — Falk has joined a team of national Sea Grant colleagues working to set the nation's outreach and research priorities on the topic. In 2007 he also teamed up with colleagues from two UD colleges to form the Coastal Community Enhancement Initiative (CCEI). The initiative is conducting workshops and seminars and funding research projects on topics such as development impacts on Sussex County's heritage resources.



Dennis Forney, chair of the Greater Lewes Foundation

The Greater Lewes Foundation (GLF) supports community members' efforts to improve the quality of life in the region. As its chair, Dennis Forney often finds himself working with Delaware Sea Grant on projects related to sound growth and development — doing things like getting community members together to discuss their vision for the greater Lewes area of the future. Working together, Sea Grant and GLF have advanced the community's dialogue on growth, said Forney, also the publisher of the *Cape Gazette*.

"Sustainability arises out of an engaged and informed public," he said.

Jim Falk

Visit our world @ www.deseagrant.org

Treasuring Our Coastal Species

Better tools are needed to bolster conservation efforts in Delaware

Calculating the economic value of migratory shorebirds

Delaware is a vital rest stop for weary shorebirds as they trek from South America to Canadian breeding grounds each spring. Their visit coincides with the spawning of horseshoe crabs along Delaware Bay's sandy shores, allowing the birds to gobble up nutritious eggs that fuel the remainder of their journey.

Flocks of tourists also come to witness the annual event, and Delaware Sea Grant economist George Parsons and graduate student Kelley Appleman have been researching their economic impact. They are analyzing the value of shorebirds to local economies as well as the impact of horseshoe crab conservation efforts — useful information for those seeking to help conserve birds that face the prospect of serious decline.

Annual census tracks horseshoe crab numbers

Eighteen years is a blip in the timeline of horseshoe crabs, who have lived on Earth for more than 300 million years. But it's significant in horseshoe crab research: that's how long volunteers have counted the spawning crabs on Delaware Bay beaches each spring.

The census got its start in 1990, when resource managers were looking for better data to manage a declining horseshoe crab population. Now there appears to be a stable but lower population of mature adults and a growing population of juveniles.

Delaware Sea Grant Education Specialist Bill Hall has overseen the census since its inception. Even though he officially retired in 2007, he plans to continue leading volunteers to observe the crabs' ancient ritual in an effort to ensure it continues for many years to come.

Bill Hall performing a horseshoe crab census.

Marina Joyce, St. Mark's High School science teacher

Many of Marina Joyce's students dream of becoming the next Jacques Cousteau. But Joyce, who developed an aquatic biology course from scratch, urges them to look beyond the glamour associated with the famed explorer.

With the help of Delaware Sea Grant publications, she teaches students about everything from the depths of the ocean to horseshoe crabs to sharks. She also encourages them to attend Coast Day, the annual event highlighting UD's coastal and ocean research. There, students see the vast range of topics ready for exploration by young minds.

Tammy Beeson

Marina Joyce encourages her students to learn inside and outside the classroom.



Teamwork is key to preventing water pollution

In the Broadkill watershed in eastern Sussex County, residential development has increased more than 40 percent since 1992. As with other fast-growing areas, environmental impacts are being felt. Monitoring by the state indicates that the Broadkill River and several of its tributaries are now impaired by pollution.

To deal with this problem, Delaware Sea Grant's Joe Farrell teamed with the Delaware Department of Natural Resources and Environmental Control (DNREC) and several other partners to create the Broadkill Tributary Action Team, a group representing watershed residents, local businesses, government agencies, and educational institutions. Through public forums, educational workshops, and other activities, the team laid the groundwork for creating a pollution-control strategy in the watershed. It also raised residents' awareness about the environmental issues facing their communities.

Katherine Bunting-Howarth, acting director of the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Water Resources

DNREC is responsible for reducing pollution in the Broadkill River and its tributaries. However, noted Katherine Bunting-Howarth, success requires a group effort. When DNREC recognized the need for local communities to understand, identify, and support any pollution-control strategies for the watershed, it asked Delaware Sea Grant to facilitate the effort.

"Delaware Sea Grant helps me build bridges with and within the community," said Bunting-Howarth. "Sea Grant helps translate scientific information to the public and thus assists in the formation of sound, balanced environmental policy."



Training events and workshops educate residents, business owners, and others about water quality issues throughout the year.

PART OF THE SOLUTION

PART OF THE SOLUTION

Joe Farrell



Be part of the coastal solution — **Get Involved!**

Native Plant Garden Tours

Learn about plants native to the Delaware coast on this self-guided tour. The garden, shown above, left, is located at the entrance to Cannon Lab on the UD Hugh R. Sharp Campus. Call 302-645-4346 for more information. For more on native plants, visit www.deseagrant.org/nativeplantgarden.

At Sea E-Newsletter

Get more information on the latest research, educational activities, and public events at Delaware Sea Grant and the UD College of Marine and Earth Studies — subscribe to our free e-newsletter, *At Sea!*

Subscribe online today at www.deseagrant.org/atsea or e-mail your request to MarineCom@udel.edu.

Marine Lab Tours

Free guided tours of UD's marine research complex in Lewes are available to the public, thanks to dedicated volunteers. Annually they lead more than 1,000 people on walking tours and highlight the work of UD marine scientists in Delaware's coastal waters and throughout the world. To learn more, call 302-645-4346.

Publications that educate, inform, and entertain

Whether you're a teacher looking for classroom materials or a cook in search of new seafood recipes, we have something for you. Our colorful horseshoe crab and dogfish shark models are great educational tools for school or home. Our Coast Day Crab Cake Cook-Off Cookbook is filled with recipes from each of the competition's first 17 years. For a copy of our publications catalog, please contact us at MarineCom@udel.edu or 302-831-8083.

Lectures, seminars, and workshops

Delaware Sea Grant offers a variety of events throughout the year that provide educational information on topics ranging from safe seafood preparation to coastal storms to the health of Delaware Bay. For a listing of events, visit www.ocean.udel.edu and click on the Workshops link at the bottom.

We hope you're inspired by Delaware Sea Grant's efforts to confront the state's coastal challenges with innovative research and outreach projects — so inspired that you'll want to be part of the coastal solution too. Learning more about the issues and getting involved are two great ways to do just that. Visit www.deseagrant.org/getinvolved to find out how to get started, and read on for a few opportunities that can get you going right now.

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Your Chance to win our Coastal Prize Package



Complete our readership survey and be entered to win our Coastal Prize Package, which includes a stay at UD's Virden Center in Lewes, a Crab Cake Cook-Off Cookbook, and much more!

Complete the survey
and send it in today!



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University of Delaware
Marine Public Education Office
222 South Chapel Street
Newark, DE 19716-3530



Delaware Sea Grant wants to know your thoughts! Complete and mail this brief survey or save a stamp and complete it online at www.deseagrant.org/survey. **Respond by July 22, 2008, and you will be entered into a drawing for our Coastal Prize Package, to be awarded August 1, 2008.** Thanks for your time!

Name _____

Address _____

City _____ State _____ Zip _____

Daytime telephone _____

E-mail: _____

- ☐ I would like to subscribe to **At Sea**, Delaware Sea Grant's e-newsletter. (Provide e-mail address above.)

1. After reading this issue of *Reporter*, which actions, if any, do you plan to take to help protect Delaware's coastal resources? Visit www.deseagrant.org/getinvolved to learn more and to take part in our programs.

- ☐ Participate in water quality monitoring efforts
☐ Learn more about healthy communities
☐ Take part in the Delaware Bay horseshoe crab census
☐ Find out how to prepare my home or business for coastal storms
☐ Learn more about properly storing and preparing seafood
☐ Attend UD's Coast Day, October 5, 2008
☐ Order Delaware Sea Grant publications
☐ Take part in a Delaware Sea Grant workshop, lecture, or seminar
☐ Visit www.deseagrant.org
☐ Other (Please specify): _____

2. What coastal challenges or issues would you like to learn more about?

3. Do you like this report's format? ☐ No ☐ Neutral ☐ Yes

4. How would you rate the readability and content of this report?

- ☐ Poor ☐ Good ☐ Average ☐ Very Good ☐ Excellent

Comments or suggestions:

5. What is your age? ☐ Under 20 ☐ 20-29 ☐ 30-39 ☐ 40-49
☐ 50-59 ☐ 60-69 ☐ 70 +

6. What is your occupation?

- | | |
|---|--|
| ☐ Business/industry | ☐ Resource manager |
| ☐ Commercial fisherman | ☐ Retiree |
| ☐ Educator | ☐ Scientist |
| ☐ Homemaker | ☐ Student |
| ☐ Legislator | ☐ Other (Please specify): _____ |
| ☐ News media | _____ |

7. Other comments or suggestions:

MOISTEN HERE TO SEAL

Separate from report along perforation, fold in half, moisten glue strip, and then mail.

Join us for...

Coast Day



2008
coastal
challenges -
coastal
solutions

Sunday, October 5
11 a.m. to 5 p.m.

Last year, more than 13,000 people participated in UD's annual celebration of the sea. Coast Day, winner of state and national awards, includes a crab cake cook-off, children's activities, research demonstrations, lectures, and much more.

Fun educational event for the whole family!

University of Delaware Hugh R. Sharp Campus
700 Pilottown Road, Lewes, Delaware
302-831-8083 www.deseagrant.org/coastday

Free!

DELAWARE SEA GRANT COLLEGE PROGRAM
REPORTER

UNIVERSITY OF DELAWARE

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