

## Sea Grant Program Impacts

<http://www.seagrants.noaa.gov/newsevents/impacts2010.html>

### Alaska Sea Grant

#### **Sea Grant helps rebuild crab stock in Alaska**

Developing technology for successful king crab hatchery rearing is important to Alaska's long term economic development and sustainability. Through the Alaska King Crab Research Rehabilitation and Biology Program (AKCRRAB) Alaska Sea Grant and its partners are evaluating the feasibility of rehabilitating depressed king crab populations throughout Alaska via large-scale releases of hatchery-cultured crabs. As of July 2010, AKCRRAB Program has produced over 100,000 juvenile crabs. ([More information](#))

### Connecticut Sea Grant

#### **Sea Grant unravels a muddy mystery**

Findings of Connecticut Sea Grant researchers investigating sudden vegetation dieback (SVD) are among the first to show a possible interaction between the epiphytic fungus *Fusarium* and the root-knot nematode, *Meloidogyne spartinae*, in a natural ecosystem. Their on-going study suggests plant pathogens may contribute to SVD, but are not the cause. It is more likely that *Fusarium*, along with other stressors, causes a tipping point that has led to SVD in many Connecticut marshes. ([More information](#))

### California Sea Grant

#### **Sea Grant research leads to banning of septic tanks in Malibu**

California Sea Grant research has shown that septic tanks leak nitrogen and phosphate into coastal waters via groundwater. These "nutrients" can trigger algal blooms and may contribute to the methylation of inorganic mercury into the toxic form that poses health risks to pregnant women and young children. Findings were incorporated into the Bolinas Lagoon Ecosystem Restoration Project and Marin County Local Coastal Plan as evidence that septic systems are capable of measurably degrading groundwater quality. The results from this project were part of the scientific basis for a November 2009 vote by the Los Angeles Regional Water Quality Control Board to ban septic tanks in Malibu. Because of concerns about water quality and public health, the California legislature has directed the State Water Resources Control Board to establish state regulations for septic systems. California and Michigan are currently the only two states in the country that do not have statewide regulations for septic systems.

### Delaware Sea Grant

#### **Improvements to the Delaware Bay Observing System**

Delaware Sea Grant researchers have developed new types of microelectrodes for biogeochemical measurements made at coastal observing systems in Delaware Bay. The electrodes placed on fixed moorings have shown that dissolved oxygen concentrations in the lower bay are above saturation throughout the productive parts of the year. The lower portion of the bay produces oxygen via photosynthesis. The research indicates that the oxygen is well mixed so that low oxygen conditions, which are harmful to marine life, do not occur. The research also demonstrates that the new electrodes are well-suited for placement on fixed moorings in the marine environment due to their versatility, rugged nature and long life. The [Delaware Bay Observing System](#) has been enhanced by this recent discovery since prior to this research it was not possible to perform these measurements. ([More information](#))

### [Florida Sea Grant](#)

#### **Research sustains the Florida clam aquaculture industry**

The Florida hard clam industry support 560 jobs, \$1.3 million in business taxes, and \$25 million in income annually. Currently, the industry is built upon a single species and is susceptible to environmental factors and fluctuating prices. Florida Sea Grant has funded research and outreach to enhance the production and profitability of this industry by developing methods for growing a native clam, the sunray venus clam (*Macrocallista nimbosa*), which soon may be produced and sold commercially in Florida. Initial market analysis indicated a positive demand for the clam. Diversifying the shellfish culture industry by developing farming technology and markets for other bivalve species will increase economic stability and growth of the industry.

### [Georgia Sea Grant](#)

#### **Georgia coastal hazards analysis and research results in new tools and baseline information for coastal planners and decision-makers**

Sea Grant-funded research and outreach has resulted in the development and implementation of a new software tool for performing shoreline change analysis. "Ambur" (Analyzing Moving Boundaries Using "R"- a statistical computing and graphics environment) can perform shoreline analyses that extend completely around each of the islands for all of the oceanfront Georgia barrier islands. As part of the shoreline analyses outreach effort, Georgia Sea Grant has produced maps of historic shorelines for each of the Georgia barrier islands, as well as summary maps showing location and magnitude of erosion and accretion on each island.

### [Guam Sea Grant](#)

#### **Sea Grant helps lead regional efforts in the Pacific**

Guam and Commonwealth of the Northern Mariana Islands (CNMI) stakeholders participated in two new Sea Grant initiatives in 2007, the NOAA Regional Research Planning and Coordination project and the NOAA Pacific Integrated Ocean Observing System project, a joint collaboration between the University of Hawaii Sea Grant Program, the East-West Center, and the School of Ocean, Earth Science and Technology at the University of Hawaii. Hawaii Sea Grant supported individuals at the Marine Laboratory of the University of Guam and the Coastal Resources Management Office in CNMI in conducting local stakeholder meetings and gathering information on research needs for the NOAA Insular Pacific Regional Research Needs Assessment project. Both individuals also serve as local representatives for the Pacific Integrated Ocean Observing System project and have conducted meetings with their respective stakeholders and produced draft reports on research needs for their locales.

### [Hawai'i Sea Grant](#)

#### **Sea Grant develops new tsunami forecasting model for Pacific**

To reliably estimate tsunami waveforms during the early stages of an event, Sea Grant researchers developed a tsunami forecasting model that uses data from tide gauges and deep-ocean pressure sensors. This research has contributed to the National Marine Environmental Forecasting Center of China, and the model was adopted by the Chilean Navy as a primary tool for their tsunami forecasting.

### [Illinois/Indiana Sea Grant](#)

#### **Online GIS resource leads to natural resource protection strategies**

Local planners striving to balance growth with natural resources need tools that help them make informed choices. Illinois-Indiana Sea Grant helped develop and promote Local Decision Maker, a GIS-based web tool that is rich with research data on environmentally-sensitive areas, open space, streams and rivers, potential sources of contamination, and endangered species. The site goes beyond natural resources to include critical information on economic development, labor markets and schools. Pilot testing of Local Decision Maker in three Indiana counties has led to strategies to protect natural areas and to plan for buffers for animal feeding operations.

### [Lake Champlain Sea Grant](#)

#### **Research supports non-chemical management of invasive species**

Sea Grant researchers found that a commonly used chemical lamprey control treatment has significant and unexpected environmental impacts on non-targeted marine invertebrates. These sub-lethal impacts could affect food sources of fishes in treated rivers and the results support the use of non-chemical techniques to reduce sea lamprey. The effects of the chemical management approach on non-target species are more clearly understood as a result of this work, allowing decision makers to better understand the impacts of treatment.

### [National Sea Grant Law Center](#)

#### **Research and outreach on ballast water regulatory regime**

The Law Center's white paper entitled [\*Michigan's New Ballast Water Regime: Navigating the Treacherous Waters of States' Rights, Federal Preemption, and International Commerce\*](#) has had immediate impact in the Great Lakes shipping community. The white paper was requested by Minnesota Sea Grant in response to new legislation to regulate ballast water that did not clearly define roles and responsibilities of federal and state governments. The Law Center's paper was widely distributed in the region, prompting numerous media articles and presentations by Minnesota Sea Grant. Without the white paper, each interested party (state and federal agencies, businesses, non-profit organizations, etc.) would have been forced to compile the legal information and policy analysis on their own. Thousands of dollars, both public and private, and hundreds of hours were saved as a result.

### [Louisiana Sea Grant](#)

#### **Reaching out to underserved communities in Louisiana**

The Vietnamese fishing community has been underserved and under-appreciated in their adopted homeland in Southeast Louisiana. Working in collaboration with local and regional partners, Louisiana Sea Grant has engaged this community on issues such as marine debris identification and removal, vessel safety programs, improved gear recommendations, community processing and marketing of fishery products. Over 500 attendees at various outreach meetings have either increased their knowledge, their income, or their quality of life in response to these instructional gatherings. Introductions of technological improvements to the Vietnamese community such as Electronic Log Books for their fishing activities has increased the traceability and accountability of their catch allowing them to command a higher price from discerning buyers. Since the beginning of efforts in the Vietnamese community, Louisiana Sea Grant and other agencies have seen the benefits of such outreach and accelerated their presence in the previously underserved population. This work in the Vietnamese fishing community was recently recognized with the LSU AgCenter Diversification Award.

### [Maine Sea Grant](#)

#### **Sea Grant identifies strategies for adapting to climate change in coastal communities**

One of the challenges society faces in a changing climate is applying global-scale information and data to the local environment. In order for communities to change and adapt to new climate regimes, they need information, tools, and resources that are applicable at the state, town, and even ecosystem level. Based on the results of the joint Maine-[Oregon Sea Grant](#) project, Coastal Community Resilience: Developing and Testing a National Model of State-based Outreach, Maine Sea Grant and the Marine Extension Team have emerged as a resource on coastal climate change impacts and adaptation, providing social science research results and expert consultation to Maine communities and other states. One of the investigators on the project is now a full-time climate change educator with Sea Grant Extension, one of only two in the nation. A new related project, funded by the National Science Foundation through the Sustainability Solutions Initiative Experimental Program to Stimulate Competitive Research (EPSCoR), is developing a climate change vulnerability and community assets assessment with pilot communities in Maine in order to develop adaptation tools and approaches. A second related project resulting from this work is a new partnership with Inner City Fund International and the Casco Bay Estuary Partnership's Climate Ready Estuaries initiative in Casco Bay. ([More information](#))

### [Maryland Sea Grant](#)

#### **Oyster restoration efforts bolstered by record production of hatchery reared spat**

A Sea Grant led program at The University of Maryland Center for Environmental Science (UMCES) is the main source of oyster spat for Maryland. The hatchery is located at the UMCES' Horn Point Laboratory on Maryland's Eastern Shore. This effort supported the planting of nearly 750 million hatchery-reared oysters in the Maryland portion of the Bay in 2009, marking a new record in the state's oyster restoration efforts. This effort supports oyster restoration to improve oyster harvest and increase ecosystem services provided by healthy oyster habitat. ([More information](#))

### [Michigan Sea Grant](#)

#### **Small Harbors Coalition supports safe navigation**

Michigan Sea Grant and its partners provided initial leadership and now provide technical support for the Michigan Small Harbors Coalition. The coalition is a group of more than 60 municipalities, harbor commissions and other entities with responsibility for managing the state's federally authorized shallow draft harbors. Coming together in 2007, the Coalition has worked collaboratively to seek increased federal funding for maintenance dredging that will enhance safety and economic value of the state's small harbors. As a result of the Coalition's effort Michigan harbor maintenance budgets increased by \$6 million. ([More information](#))

### [Minnesota Sea Grant](#)

#### **Sea Grant helps orchestrate Erie Pier dredge material reuse**

Minnesota Sea Grant worked with the US Corps of Engineers to reengineer how dredge material is handled in the US. This project has the potential to create a multi-billion dollar impact as confined disposal facilities become full and outdated. Staff initiated a relationship with the National Sea Grant Law Center to engage the help of law students to review the policies that might govern the movement and use of dredge material. Staff also initiated a cost market analysis to create an understanding of the value of recycle-reuse of dredge material. The Law Center's final report, "Converting the Erie Pier Confined Disposal Facility to a Processing and Reuse Facility: Is an Interstate Compact a Necessary Component?" was published in the *Journal of Maritime Law and Commerce*.

### [MIT Sea Grant](#)

#### **SeaPerch Institute enters second year and reaches over 425 teachers**

In 2009, Massachusetts Institute of Technology (MIT) Sea Grant piloted the SeaPerch Institute (SPI). SeaPerch is an innovative underwater robotics program that trains teachers to teach their students how to build an underwater Remotely Operated Vehicle (ROV). The Institute allows Sea Grant educators and engineers to work more closely with selected schools and thoroughly embed Sea Perch into a school's curriculum. The SPI is leveraging the success of the Sea Perch Program which started in 2003 as an innovative way to ignite children's enthusiasm for science, technology and engineering. Sea Grant educators have run over 24 two-day "train the trainer" workshops across the country and internationally, educating over 425 teachers. These teachers then return to their schools to teach their students to build an ROV. ([More information](#))

### [Mississippi-Alabama Sea Grant](#)

#### **Sea Grant helps shrimp farmers improve shrimp survival by 20%**

When post-larvae (PL) or baby shrimp are moved from the nursery to low-salinity conditions of the growing ponds poor survival is often observed. PL shrimp are a significant expense, and if the quantity surviving is not known, ponds cannot be properly managed. Improved techniques were required to increase survival and subsequently improve management and profit margins. Mississippi-Alabama Sea Grant research is helping local shrimp farmers improve the survival of PL shrimp as they grow by gaining more awareness of how changes in temperature and salinity impact shrimp survival. This has resulted in better survival during the production season, allowing farmers to increase their production at harvest from an average of 2,500-2,700 pounds/acre a couple of years ago to greater than 3,000 pounds/acre in 2009 or 10- to 20-percent increase in production. This resulted in \$84,000 savings. In short, Mississippi-Alabama Sea Grant improved acclimation techniques utilized by inland shrimp farmers in Alabama, thus increasing survival and production of shrimp at harvest.

### [New Hampshire Sea Grant](#)

#### **Sea Grant research develops new grid systems on shrimp trawls**

Sea Grant-developed grid systems reduced Gulf of Maine shrimp count (average size increased) by 15 to 20 count/pound. New Hampshire Sea Grant fisheries extension staff worked with fishermen to employ this gear with impressive results. The gear was utilized by 4 commercial shrimp fishermen who switched from the more traditional shrimp harvesting nets. A newly-developed topless shrimp trawl reduced Gulf of Maine herring by-catch by 90% without loss of shrimp. A rope separator haddock trawl was completed that has reduced cod by-catch by 60% with only a 16% loss of haddock. It also eliminated nearly all other species including flounders, lobsters, skates and dogfish.

### [New Jersey Sea Grant](#)

#### **Sea Grant Clean Marina efforts improve coastal water quality and enhance recreational boating**

Recreational boating activities often contribute to nonpoint source pollution. The New Jersey Marine Sciences Consortium/New Jersey Sea Grant Program continued its partnership with the New Jersey Department of Environmental Protection to implement the New Jersey Clean Marina Program to minimize the impact recreational boating activities have on the environment. Sea Grant has offered Clean Marina-related workshops to over 140 marinas, sent guidebooks to 230 marinas and recognized over 30 marinas as a Clean Marina. Marinas have implemented Clean Marina best management practices to reduce spills that occur during fueling, capture water from hull washing, rent dustless sanders, improve recycling efforts, collect mercury containing devices, develop emergency response plans, educate boaters and installed pumpout facilities. ([More information](#))

### [New York Sea Grant](#)

#### **Sea Grant takes lead in addressing and preventing viral hemorrhagic septicemia**

Viral hemorrhagic septicemia (VHS) is a serious viral disease of freshwater, marine and hatchery-raised fish. A new strain of VHS in the Great Lakes causes mortalities in several economically important species. With partial New York Sea Grant research support, researchers refined the molecular technique used to diagnose VHS and generated key research information necessary for operators of fish-rearing facilities to prevent and/or contain the virus. Since 2009, New York Sea Grant has coordinated workshops with the Lake Champlain and Pennsylvania Sea Grant programs that focused on biosecurity concepts. Forty-five operators of state, federal and private fish-rearing facilities as well as fish health experts were provided with the new protocol for the containment and prevention of the new VHS virus. Based on workshop evaluations, 100% of the workshop attendees indicated that they would utilize these guidelines in their own fish-rearing facilities and share them with other aquaculture practitioners. Through its research and outreach, New York Sea Grant is rapidly conveying information about VHS and its transmission directly from the laboratory to managers, helping to prevent the disease from negatively impacting Great Lakes recreational and commercial fisheries. ([More information](#))

### [North Carolina Sea Grant](#)

#### **Sea Grant encourages seasonal choices for North Carolina seafood**

North Carolina Sea Grant has long been dedicated to focusing consumer attention on the importance of seasonal fisheries in communities from Currituck to Calabash. At varied events each year, thousands of visitors take home Sea Grant's "Local Catch" wallet cards and charts to learn more about North Carolina seafood. The Carteret Catch local seafood program, initiated by Sea Grant and partners, has inspired other education and branding efforts, including Brunswick Catch, Ocracoke Fresh and Outer Banks Catch, the latter having received a \$150,000 grant from an statewide foundation. ([More information](#))

### [Ohio Sea Grant](#)

#### **Sea Grant helps Ohio tourism team with online economic development toolbox**

Tourism brings in \$38 billion annually to Ohio businesses, attractions, hotels, restaurants and retail shops. Product development was recognized by the Ohio State University (OSU) Extension Tourism Team as an important way to encourage tourism growth in Ohio. The Ohio Department of Development's Tourism Division provided matching funding to an OSU Extension grant. The team assembled information on many topics, including starting a new business, collaborative marketing, identifying trends, gathering community input, creating new products and much more. Ohio Sea Grant's Tourism Program Director presented at town hall meetings throughout the state to announce the availability of this economic development tool. A new electronic toolbox was developed to provide an up-to-date site for tourism professionals to keep pace with the ever-changing needs of the dynamic tourism industry. The toolbox includes links on starting a business and other educational materials. New material is created and added by team members to meet clientele needs. Training videos and podcasts are available at the toolbox. This is an industry resource that is helping to create a stronger Ohio economy. ([More information](#))

### [Oregon Sea Grant](#)

#### **Ultraviolet light water treatment helps protect West Coast oysters**

When *Vibrio tubiashii* threatened the \$85 million West Coast commercial oyster industry, Oregon Sea Grant provided funds to come up with a solution. Researchers developed and successfully tested a water treatment system that uses ultraviolet light to kill the pathogen. The Whiskey Creek Hatchery – the largest independent producer of shellfish larvae on the West Coast, providing seed stock to at least 60 US-based growers – invested \$100,000 of its own money to install the system and effectively protected its stock. The system has also been installed in Puget Sound hatcheries. Oregon Sea Grant continues to work with the shellfish industry to help it deal with challenges and untapped production opportunities.

### [Pennsylvania Sea Grant](#)

#### **Engagement increases student/teacher connections to coastal areas**

Sea Grant educators successfully piloted the Watershed and Airshed Education Program to increase understanding of the connections between the water, the atmosphere and the land. With leveraged funds from the DuPont Company, staff engaged 227 middle and high school youths and their teachers who live in Chester and Philadelphia in classroom, laboratory and field programs at local natural areas. The results showed that the financial, technical and instructional assistance from Sea Grant became a catalyst for schools to improve science and environmental education instruction and motivated teachers to improve their teaching practices. The program had a significant impact on impoverished schools where many students had never been on a field trip, and for teachers who have never taught science using field or lab activities. ([More Information](#) )

### [Puerto Rico Sea Grant](#)

#### **Sea Grant provides instrumental science and extension research for adaptive fisheries management**

After the sweeping fisheries regulations of 2004, and the ensuing banning of beach seines (a traditional fishing gear of the Caribbean), without scientific support, Sea Grant was summoned by the Department of Natural and Environmental Resources and the fishers to engage in a research project to understand the impact of the gear, and to offer recommendations supported by the best research available. The study was conducted throughout 2009 with more than 150 fishers participating on a voluntary basis to deploy the gear. The study is the first scientific report produced in Puerto Rico providing information which eventually will allow resource managers to decide the best management for this type of fishery. A series of recommendations, under different fishing scenarios, were also included. A video CD was also provided, displaying the effect of the seine, especially on seagrass areas.

### [Rhode Island Sea Grant](#)

#### **Trawl uses fish behavior to reduce bycatch and preserve haddock fishery**

By fostering collaboration between commercial fishermen, a commercial net maker, and fisheries researchers, Rhode Island Sea Grant brought the “Eliminator Trawl” into fisheries management. This trawl net dramatically reduces the bycatch of cod by exploiting fish behavior: cod tend to swim down when being pursued by a net, while haddock swim upward. The net is designed to allow the cod to escape through the lower portion of the net while the haddock are caught. The Eliminator Trawl, which won the 2007 World Wildlife Fund International Smart Gear award, allows fishermen to once again pursue haddock, which had been closed to fishing due to bycatch of cod. This innovation is estimated to have a \$30 million impact on the New England economy.

## [South Carolina](#)

### **Long Bay hypoxia research examines causes of “dead zone”**

In 2004, anglers were startled by unusually large catches of flounder in the coastal ocean waters off Myrtle Beach, SC, often called Long Bay. Hypoxic, or low-oxygen, levels in the water had created a “dead zone” that drove fish toward the shoreline. Again, in August 2009, water quality monitoring indicated that Long Bay experienced an anoxic event. In response, the S.C. Sea Grant Consortium convened a Long Bay Working Group (LBWG) to collaborate on research, monitoring and educational efforts, and to develop strategies to support management responses. The Consortium and its partners are supporting scientists studying the physical, biological, chemical and geological coastal ocean processes in Long Bay in order to try to identify the causes of these phenomena. The LBWG is developing tools for use in forecasting future low-oxygen events in Long Bay. These efforts have fostered additional studies, including research to evaluate the contribution of groundwater discharge to water-quality issues, as well as two pilot studies using autonomous underwater vehicles to validate and expand the findings. The research results are being used by coastal and fishery managers and local communities. ([More information](#))

## [Texas Sea Grant](#)

### **Sea Grant reduces fuel consumption and saves jobs**

Texas Sea Grant facilitated the testing of new, fuel-efficient trawl gear by 15 elite producers throughout the Gulf and South Atlantic states. So far, reported fuel savings range from 20 to 39 percent. For the median trawler, expected annual fuel savings amount to roughly 19,000 gallons per season. Assuming \$3.50 per gallon for industrial diesel, the average for the first five months of 2008, this experimental trawl gear saves the vessel owner about \$67,000. In Brownsville, Texas, where more than 85 percent of the vessels have adopted the experimental gear, fuel savings were an estimated 2.5 million gallons valued at \$8.75 million last year alone. An estimated 200 jobs were saved because without the fuel savings, many of the boats would have remained at dock during the 2008 season.

## [USC Sea Grant](#)

### **Visitor impact study leads to great stewardship of rocky intertidal marine protected areas**

A researcher from USC Sea Grant documented visitor impacts on near-shore ecosystems to identify changes in the abundances of marine life. As a result of the study, Orange County shoreline communities adopted policies to foster the management and stewardship of their rocky-intertidal Marine Protected Areas. The cities of Laguna Beach, Newport Beach and Dana Point established positions for shore or reserve managers who patrol the Orange County coast during low tides to educate and advise visitors on proper stewardship. The programs have now grown to include a cadre of docents who volunteer their time to educate shore visitors on appropriate tide pool etiquette. ([More information](#))

### [Virginia Sea Grant](#)

#### **Sea Grant enhances marina-related business in Virginia coastal economies by over \$32 million**

The viability of coastal communities in Virginia depends on their ability to use coastal natural resources sustainably. To do this, communities require data to make informed economic policy decisions, and technical assistance to access financial resources. The Virginia Sea Grant Coastal Community Development program conducts socioeconomic research and provides assistance to coastal communities so that they can sustainably develop the economic potential of their waterfronts. Sea Grant completed a survey on the impact of personal property taxes on boat-owners that helped the Hampton City Council make decisions about their tax policies. Based on this work, the City Council voted to extend their \$0 personal property tax on recreational watercraft, retaining an annual estimated \$30.8 million in economic activity of boat owners and the retention of 394 full time jobs. Sea Grant also provided technical support to Virginia marinas applying for federal Boating Infrastructure Grants (BIG), generating \$0.5 million in new BIG investments at Commonwealth marinas. That direct funding translated into \$1.13 in economic impact to Virginia plus \$0.3 million in program match from local marinas and communities, for a total of \$1.43 million during 2009. This level of economic output in the marina sector is associated with 18 full time jobs.

### [Washington Sea Grant](#)

#### **Deep-sea habitats and inhabitants astound scientists on Sea Grant-funded cruise**

Reef-building glass sponges were thought to be extinct until Canadian scientists discovered them off the coast of British Columbia in the late 1980s. With funding from Sea Grant, University of Washington researchers expanded our understanding of glass-sponge reefs and the range and conditions under which their unusual builders can operate. Glass sponges remain fixed in place during their 100- to 200-year life spans. They feed by filtering bacteria from seawater. In the case of the Washington reefs, the bacteria may be living on methane or natural gas that the crew discovered as it seeped out of the ocean floor near the reefs. The Washington reef could represent a new kind of undersea community and has many implications for marine spatial planning, climate change and fisheries. ([More information](#))

### [Woods Hole Sea Grant](#)

#### **Probes help predict red tides**

Sea Grant researchers have developed molecular probes that help identify the species responsible for harmful algal blooms (HABs). The probes are used to rapidly characterize bloom conditions and the potential threat of toxin accumulation in shellfish stocks, a serious public health risk. The probes have been commercialized by Saigene, Inc., and were very effective in predicting extensive red tide conditions experienced off the New England coast.

### [Wisconsin Sea Grant](#)

#### **Sea Grant research leads to fewer beach closings**

Across the nation, beach closings due to contamination from sources such as storm water, sewage and bird waste have long posed a challenge for public health officials, regulatory agencies, water resource managers and policymakers. Now, thanks to a Sea Grant researcher who developed DNA-based methods to track sources of pollution, problems are accurately pinpointed and addressed. In Wisconsin's largest city, Milwaukee, formerly unused lakefront recreational areas are now jammed with beachgoers from a nearly 1.6 million-population metropolitan area. Bradford Beach, the largest, has been cleaned up with \$1.5 million in combined public-private money that funded work such as installation of storm water outflow infrastructure along the beach, rain gardens and the use of trained border collies that chase off sea gulls, whose waste is a significant source of contamination. ([More information](#))