



## Sustainable Coastal Development 2012 Focus Team Report



Under the National Strategic Plan, Sea Grant supports the following Sustainable Coastal Development national goals: 1) healthy coastal economies that include working waterfronts, an abundance of recreation and tourism opportunities, and coastal access for all citizens; 2) coastal communities that make efficient use of land, energy, and water resources and protect the resources needed to sustain coastal ecosystems and quality of life; and 3) coastal citizens, community leaders, and industries that recognize the complex inter-relationships between social, economic, and environmental values in coastal areas and work together to balance the multiple uses and optimize environmental sustainability.

Annually, each Sea Grant (SG) Program submits short “impact statements” (impacts) via the National SG Office reporting process (PIER). Impacts describe significant and verifiable economic, societal and/or environmental benefits of SG work. The SCD Focus Team examined impacts from 2011 to:

1. Assess SG’s progress towards its strategic plan focus area goals and outcomes;
2. Identify national impacts that should be highlighted in communication products and reporting;
3. Pinpoint gaps to achieve the focus area goals outlined in the National Strategic Plan (both for the most recent year and for the duration of the plan);
4. Identify emerging issues and new opportunities for Sea Grant.

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**Goal 1:** *Healthy coastal economies that include **working waterfronts**, an abundance of recreation and tourism opportunities, and coastal access for all citizens.*

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The Focus Team agreed that the Sea Grant network is making very good progress toward Goal 1, noting a network-wide effort to better evaluate impacts in an economic context by quantifying dollars and numbers of jobs associated with Sea Grant’s efforts. The Focus Team felt that this information would be particularly helpful in communicating Sea Grant’s value to outside audiences.

The Focus Team remarked on the increasing attention toward **working waterfronts** issues over the past four years of review, an effort catalyzed by the recent establishment of the National Working Waterfronts Network. They also observed an increase in **coastal tourism**-related efforts over that time period and acknowledge the leadership of the coastal tourism working group that grew out of earlier Focus Team initiatives. There were several good examples, and Ohio Sea Grant’s work stood out in particular. Coastal tourism development was suggested as a possible topic to showcase at a congressional briefing this year. The Focus Team complimented efforts to improve public **coastal access**, as well.

Finally, the Focus Team pointed out that the 2011 impacts in particular demonstrate how Sea Grant has helped coastal communities **respond to the economic downturn**. They highlighted several excellent examples of working with businesses and industries to look for cost savings and risk reduction and to foster community-level economic development as well.

### Preserving Working Waterfronts

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- ***Sea Grant Programs help create National Working Waterfronts Network***

MAINE SEA GRANT and the NATIONAL SEA GRANT LAW CENTER took a leadership role in the emerging National Working Waterfronts Network, which aims to help water-dependent industries and individuals gain access to tools and information for preserving working waterfronts and waterways nationwide. Network partners, including Florida and Virginia Sea Grant, successfully competed for a \$300,000 grant from the Economic Development Administration to develop a *Sustainable Working Waterfronts Toolkit*.

- ***City of Gulf Shores, Alabama modifies zoning to preserve water-dependent businesses***

With the assistance of MISSISSIPPI-ALABAMA SEA GRANT's extension and legal programs, the Gulf Shores Planning and Zoning Commission approved the Waterway Village District Overlay, which will protect, preserve, and advance working waterfronts within the community and serve as a model ordinance for other communities.

- ***Visualization tool helps local governments value and retain traditional maritime infrastructure***

FLORIDA SEA GRANT-funded researchers developed the Florida Maritime Infrastructure Planning to integrate locations of ramps, marinas, and boatyards into a Google Maps environment. The Florida Department of Economic Opportunity has adopted the tool to identify conflicts between critical maritime structures and current zoning or future land use designations.

### Strengthening Coastal Tourism

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- ***Ohio Tourism Leadership Academy***

OHIO SEA GRANT has developed curriculum for and co-coordinated the Ohio Tourism Leadership Academy, offered through the Ohio Travel Association, for several years. Recent graduates have run for local elected offices, statewide association boards, or regional boards. In 2011, the Ohio Sea Grant extension program director was recognized as the top tourism industry professional in the state.

### Improving Coastal Access for the Public

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- ***New waterfront project enhances public access to shore***

RHODE ISLAND SEA GRANT helped the Rhode Island Coastal Resources Management Council develop the Urban Coastal Greenways Policy, which promotes vegetated buffers in urban areas but allows development as long as it incorporates public access.

### Working with Businesses and Industries to Save Money, Reduce Financial Risk

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- ***Helping Virginia boaters and economy by assisting marinas with access to funding***

VIRGINIA SEA GRANT provided technical assistance to Commonwealth marinas to support competitive applications for Dept. of Interior Boating Infrastructure Grants (BIGs). The awarded funding for

infrastructure build-out has led to a total impact of \$2.5M in 2011-2012 and supports 32 full-time Virginia jobs.

- ***Charter boat captains made significant changes in the organizational structure of their businesses to reduce personal liability***

Since 2004, DELAWARE SEA GRANT, in partnership with Maryland Sea Grant, has sponsored annual workshops for charter boat captains from a five state region to educate participants about maritime legal issues, business organization, insurance, etc. Participants not previously incorporated reorganized their businesses into LLCs to reduce personal liability, and many participants cited insurance savings and improved marketing skills as well.

- ***Washington Sea Grant provides boat dealers with vital sales data for economic recovery***

WASHINGTON SEA GRANT worked with the WA Dept. of Licensing and Northwest Marine Trade Association to obtain and analyze boat sales data, then share the detailed and frequently updated results with the Northwest boating industry to allow boat dealers to adjust their tactics.

- ***Contributions to dredge material beneficial reuse and recycling***

MINNESOTA SEA GRANT, WISCONSIN SEA GRANT, and the Duluth-Superior Harbor Technical Advisory Committee partnered with state agencies to evaluate and pre-certify clean dredge material and prioritize its reuse when possible. Reusing this dredge material will prevent the need for a costly new Contained Disposal Facility (CDF) and allow U.S. Army Corps dredging of the harbor to continue.

### **Working with Communities to Promote Economic Development**

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- ***Sowing seeds of economic development, resourceful leaders create jobs in Sussex***

DELAWARE SEA GRANT partnered with the Sussex Economic Development Action Committee to offer the Resourceful Leaders Program, which provided a transformational leadership experience to ten Sussex County individuals and led to the creation of ten new jobs.

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**Goal 2:** *Coastal communities that make **efficient use of land, energy, and water resources** and protect the resources needed to sustain coastal ecosystems and quality of life.*

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The SCD Focus Team felt that efforts toward achieving Goal 2 represented a good continuation of what they had reviewed previously. They noted that it may be more difficult for an “impacts”-focused review to capture the progress toward this goal, because it encompasses many planning-related activities, which do not necessarily reach the level of “impact” (v. “accomplishment”) in Sea Grant’s current reporting system.

Even so, the SCD Focus Team was able to highlight some very good examples of Sea Grant work’s leading all the way to tangible community-level impact. These impacts are reflected in the adoption of policies or ordinances that will help communities **reduce pollution** of their coasts and waterways, **reduce their energy use** and carbon emissions, and **improve their resiliency** to challenges posed by coastal hazards or limited resources. The Focus Team also highlighted outstanding examples of Sea Grant-funded **sustainability research** that can support community efforts to manage pollution, energy, and resiliency in the future.

## Communities take action to reduce pollution of waterways

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- ***Low Impact Development Ordinance passed by Los Angeles City Council and signed by mayor***

UNIVERSITY OF SOUTHERN CALIFORNIA SEA GRANT worked with partners to develop a Low Impact Development (LID) Ordinance for the City of Los Angeles, which, in winter 2011, was approved by City Council and signed by Mayor Villaraigosa.

- ***Pennsylvania Sea Grant assists Greene Township property owners conserve farmland***

PENNSYLVANIA SEA GRANT provided technical assistance to nine farming families in Greene Township interested in creating an Agricultural Security Area (ASA). In June 2011, after years of reluctance to join other Townships in Erie County, Greene Township's government voted unanimously to create an ASA conserving 989 acres of prime farmland.

- ***Maine Sea Grant clean water work helps open clam flats in Ogunquit***

In response to enhanced monitoring and source-tracking efforts supported by MAINE SEA GRANT-coordinated Healthy Beaches Program, the town of Ogunquit improved their sewer and stormwater infrastructure. In 2011, the town was able to conditionally open some of the shellfish growing areas for clamming, resulting in additional income for the clammers and \$13k in license revenue for the town.

## Communities take action to reduce energy use, carbon emissions

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- ***Hawai'i Sea Grant helped the University of Manoa identify energy savings and the Forest City Residential Management reduce energy consumption***

HAWAI'I SEA GRANT's sustainability specialist worked with students to conduct energy audits for the university, prompting a campus-wide lighting retrofit effort. In partnership with the Hawai'i Natural Energy Institute, Hawai'i Sea Grant's technical assistance helped Forest City Residential Management Co. reduce energy consumption in military housing on O'ahu and Kaua'i.

- ***Virginia fish farm adapts green technology for water heating system***

Technical assistance from a VIRGINIA SEA GRANT extension agent allowed a fish farm in Quinby, Virginia to install a solar-powered water heating system, helping the farm to save money on energy—particularly expensive on Virginia's Eastern Shore—and go green.

## Communities take action to improve resiliency

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- ***Florida Sea Grant research leads to updates in the Florida Building Code, increasing the resiliency of coastal communities to storms and hurricanes***

Florida Sea Grant-funded research at Florida International University's state-of-the-art "Wall of Wind" facility directly underpinned updates to the Florida Building Code aimed at decreasing the vulnerability of roofs and building interiors to hurricanes.

- ***Pennsylvania Sea Grant helped the City of Chester incorporate climate adaptation planning objectives into its Vision 2020 Comprehensive Plan***

As an extension of work begun during the September 2010 *Delaware County Roadmap for Adapting to Coastal Risks* Workshop, PENNSYLVANIA SEA GRANT worked with the City of Chester to incorporate climate

adaptation planning objectives into its Vision 2020 Comprehensive Plan with the aim of making this tidal riverfront community more resilient.

- **Lake Zurich looks to plan for a sustainable water supply**

ILLINOIS-INDIANA SEA GRANT, as part of an integrated water resource management team, is helping Chicago suburb Lake Zurich explore water supply options such as water conservation pricing. As a result, Lake Zurich became a partner in *Water Sense*, an EPA program focused on water efficiency.

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### Sea Grant-funded research supports sustainability and resiliency

- **NH Sea Grant-supported research leads to proposed legislation to ban coal tar-based sealcoat**

NEW HAMPSHIRE SEA GRANT-funded research contributed to nationwide research and dialogue about the impacts of coal tar-based sealcoat, leading to proposed legislation calling for local, state, and nationwide bans and encouraging voluntary market reduction.

- **Hawai'i Sea Grant supported sustainable energy and carbon management efforts on Kaua'i**

HAWAI'I SEA GRANT supported adoption of green technology (Imbert gasifiers) in automobiles that can use a local biofuel source (kukui nuts). The byproduct of gasification, char, can be used as a farm fertilizer, sequestering carbon.

- **Recommendations for hurricane-resilient construction**

NORTH CAROLINA SEA GRANT-funded researchers surveyed damage to buildings following Hurricane Ike's landfall on Galveston, Texas to determine why some survived while neighboring buildings did not. The study led to new recommendations for depth/damage curves, suggesting that a higher floor elevation is a primary safety factor.

- **Minnesota Sea Grant funds discovery of mechanism causing accelerated freshwater corrosion**

Investigations that MINNESOTA SEA GRANT set in motion by convening an expert panel (2004), funding research (starting 2007), and partnering with the U.S. Naval Research Laboratory led to the discovery of a new type of freshwater corrosion in ports. The findings are informing research, mitigation, and risk assessment.

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**Goal 3:** *Coastal citizens, community leaders, and industries that recognize the complex inter-relationships between social, economic, and environmental values in coastal areas and **work together to balance the multiple uses and optimize environmental sustainability.***

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The SCD Focus Team felt that the network was making good progress toward Goal 3, as there were many examples of consensus building, conflict resolution, and facilitation. The Focus Team noted a broad trend toward more engagement of ports and marinas (see also Goal 1 highlights) and recognized examples of engagement with specific communities (such as fishermen) who may not have been included in the planning process otherwise.

Key themes in the Sea Grant network's progress toward Goal 3 include fostering **citizen stewardship** by educating coastal citizens about their resources and fostering **civic engagement** through regional

studies. Sea Grant programs also demonstrated many examples of bringing together stakeholders to **facilitate discussion** and seek solutions for **balancing multiple uses**.

### Fostering Citizen Stewardship and Civic Engagement

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- ***Protecting Chesapeake Bay watersheds and improving stormwater management***

MARYLAND SEA GRANT extension provided support and assistance for the creation of the Watershed Stewardship Academies, which train volunteers to plant trees, install rain barrels, and create conservation landscaping, best stormwater management practices that will improve water quality in the Chesapeake Bay watersheds.

- ***Washington Sea Grant engages and motivates thousands of Puget Sound residents to adopt behaviors that reduce pollution and build stewardship***

Washington Sea Grant's South Puget Sound water quality outreach involved citizen pledges to manage waste, citizen science monitoring, educational field trips and classroom visits, and beach monitoring, with the eventual participation of over 12,000 community members in 2011. An evaluation of Snohomish County septic system education confirmed the effectiveness of the Sea Grant approach and delivery in motivating people to maintain and monitor their systems.

- ***Undo the Great Lakes Chemical Brew project spreads awareness regarding the impacts of improperly disposed pharmaceuticals and personal care products***

PENNSYLVANIA SEA GRANT and its partners have collected 2.4 million unwanted pills at multiple collection events and educated over 1 million basin residents about proper disposal. As a result of these efforts, a group of Pennsylvania representatives proposed the Pharmaceutical Stewardship Act.

- ***National Park Service Western Reserve Heritage Area feasibility study fosters civic engagement***

OHIO SEA GRANT helped facilitate a civic engagement and study development process for a proposal to designate the Western Reserve (fourteen northern Ohio counties) as a national heritage area. Though ultimately national designation was not recommended, a core committee representing all fourteen counties has formed to continue working together to implement strategies for marketing the Western Reserve's unique tradition.

### Decision-Support Tools and Public Engagement for Marine Renewable Energy Siting

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- ***MIT Sea Grant supports science-based decision making for marine renewable energy siting***

MASSACHUSETTS INSTITUTE OF TECHNOLOGY SEA GRANT-funded scientists developed a computational tool to examine the changes in the hydrodynamics and sediment transport resulting from installation of a tidal energy farm. The tool will help evaluate the effects of tidal energy extraction in Massachusetts coastal waters.

- ***Preparing for our wind-powered future***

DELAWARE SEA GRANT funded research for and development of maps and a policy document to advise regulatory agencies, community members, and stakeholders on regional ocean uses to aid ongoing marine spatial planning efforts.

- ***Michigan Sea Grant assessment helps county develop a public engagement process for wind energy planning***

MICHIGAN SEA GRANT supported an assessment process in which researchers collaborated with coastal communities and evaluated wind energy options, assessing the public's concerns and keeping the dialogue civil. Based on the assessment's findings, Bay County, MI developed a single wind ordinance for the county and conducted numerous meetings and a survey in a transparent public process.

### **Facilitating Multiple Uses**

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- ***Maine Sea Grant enables participation of fishing industry in marine spatial planning***

MAINE SEA GRANT funded research by the Island Institute to reconcile community representations of practices on water with biophysical data used in marine spatial planning. The resulting marine maps have been used to influence planning and energy siting decisions, and together they represent a model process for fishing industry participation in planning.

- ***Washington Sea Grant-brokered lane agreements with West Coast crab fishermen and towboat companies save more than \$1 million per year***

WASHINGTON SEA GRANT brought together West Coast Dungeness crab fishermen and river bar pilots, tug, and barge companies, as well as the Coast Guard, to negotiate tow lanes and open fishing areas, improving maritime safety and saving over a million dollars a year in crab gear replacement and towboat repair costs.

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## GAPS AND EMERGING THEMES IN SEA GRANT'S SUSTAINABLE COASTAL DEVELOPMENT WORK

*In addition to reviewing the progress toward the national strategic goals, the Focus Team reviewed the impacts to gauge whether they were filling previously-identified gaps (enumerated in the 2010 Annual Report), to identify additional areas needing attention, and to recognize emerging themes that cross-cut the strategic goals.*

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### Gaps Identified in 2010

In the Sustainable Coastal Development 2010 Annual Report, the Focus Team identified three gaps:

- Extension activities involving **Smart Growth** and **Land Use**
- **Carrying capacity** research
- Local leadership in **underserved** or **at-risk communities**

This year, the Focus Team discussed whether the 2011 reported impacts better addressed these previously identified gaps.

#### ***Extension activities involving Smart Growth and Land Use***

While few impacts addressed the concept of “Smart Growth” using that term, the Focus Team found many examples of programs working with communities in mapping, planning, and visualizing land use. As mentioned earlier for Goal 2, often planning activities are captured more frequently in the “accomplishment” reporting, and only those extension efforts that result in policy or ordinance changes are reported at the “impact” level.

#### ***Carrying capacity research***

On the topic of carrying capacity research, Focus Team members reflected on earlier discussions that pointed out that while there is a need to consider this limitation—how many people can coastal communities add, based on the available resources?—the research is ‘not keeping up.’ Notably, the Chicago Metropolitan Agency for Planning (CMAP) has conducted comprehensive regional water supply/demand plans for that area and with Sea Grant’s help has considered alternative water pricing schemes. But communities across the country will increasingly face the need for these kinds of assessments. It was pointed out that the concept of “carrying capacity” itself sometimes meets with negative reception, and that Americans tend to assume that technology will always increase carrying capacity. The Focus Team discussed other ways of broaching the subject with constituents, such as discussing “limits of the natural environment.” In general, this was considered an ongoing gap.

#### ***Local leadership in underserved or at-risk communities***

The 2010 Annual Report noted that while Sea Grant programs do work with disadvantaged and underserved communities, it would be helpful to bolster that work with additional social science research scaled to those local communities.

This year, the Focus Team highlighted several impacts that demonstrated ongoing **work with underserved communities**. In each case, these impacts were categorized in the Seafood-themed Focus Area, rather than in Sustainable Coastal Development. These demonstrate how Sea Grant programs can work toward the SCD goals of economic development and engaged citizenry while promoting sustainable fisheries.

The Focus Team also highlighted notable impacts that represent **social science research and/or research application** aimed at describing, protecting, and strengthening individual fishing and residential communities. These examples, which span the three SCD goals, are below.

### Working with Underserved Communities

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- ***Washington Sea Grant trains tribal fishermen and communities to enhance the value of their fish and seafood harvests***

In 2011, WASHINGTON SEA GRANT partnered with Alaska Sea Grant to offer three three-hour workshops, training a total of 35 Lummi, 43 Nisqually, and 1 Quinault fishermen in ways to improve the quality, handling, and marketing of tribal seafood products, allowing them to command higher prices.

- ***Crescent City Supported Fishery***

LOUISIANA SEA GRANT proposed and helped execute the first Community Supported Fishery in the Gulf States, connecting urban consumers to fishing families who faced a steep recovery from the Deepwater Horizon oil spill.

- ***Wisconsin's Urban Aquaculture Initiative***

WISCONSIN SEA GRANT supported UW-Milwaukee WATER Institute personnel to provide expert technical assistance for all aspects of urban aquaculture and produced communications material to advertise the initiative. These urban aquaculture operations, including nationally renowned not-for-profit Growing Power, sustainably feed local residents, create jobs, and clean up brownfields.

### Applying Social Science to Local Communities

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- ***Alaska Sea Grant championed new entrants into the fishing industry***

As part of the 2011 ALASKA SEA GRANT-organized Alaska Young Fishermen's Summit, participants testified to the Alaska Legislature's Special Fisheries Sub-Committee on the aging of Alaska's commercial fishermen and the importance of access to low interest loans and other forms of capital for new entrants into the industry. This testimony contributed to the passage of a bill reducing interest rates and raising the amount fishermen can borrow from the state for salmon entry permits.

- ***Helping communities plan for growth through tourism / Facilitating community identity and development discussions***

NORTH CAROLINA SEA GRANT-supported researchers worked with local tourism, development, and business organizations in three pilot counties to conduct social science research assessing the locals' perceptions on the impacts of tourism and second-home development on their communities. Additionally, a North Carolina Sea Grant extension agent, working with the Core Sound Waterfowl Museum and Heritage Center, helped launch the Saltwater Connections team to identify community needs and strategies in three other locations.

- ***Update: New methodology developed to engage Oregon fishers in community-profile data***

In 2011, OREGON SEA GRANT's long-form community profiles (developed to supplement NOAA Fisheries' short-form profiles) were used by resource managers for decision-making as a go-to reference throughout Oregon's marine reserve selection process, and by communities such as Port Orford within their fishing community initiative processes.

## Additional Gaps

Additionally, the Focus Team expressed concern at the lack of impacts reflecting efforts to help communities incorporate sea level rise and Great Lakes water level change projections into planning. This apparent lack may be due to programs categorizing these activities into the Hazards Focus Area. Or efforts may be ongoing (at the “accomplishment” level), not yet having achieved appreciable community-scale impacts. Another limitation may be community interest in or openness to the topic. Nevertheless, sea level rise in particular will be an increasingly visible concern for coastal communities over the next several years and Sea Grant must be prepared to aid communities in planning for and adapting to this new reality.

## Emerging Themes and Other Highlights

While the Focus Team identified several trends that represent continuations of previous years’ efforts, they also noted some that seemed increased from previous years:

- **Economic Valuation** - Recent years, particularly in the face of difficult budget times, have seen a network-wide push for better economic valuation of Sea Grant’s impacts. The Focus Team noted that the 2011 impacts were more frequently described in terms of economic benefits, dollars saved, or jobs created or retained.
- **Engagement with Ports & Marinas** – The 2011 impacts seemed to reflect a broader engagement with ports and marinas, addressing topics such as dredging, ballast water, and infrastructure.
- **Social Science Research** – In response to recommendations from all four Focus Teams in 2010, the National Office developed a Social Science Research National Strategic Initiative, which supplemented social science funding in FY11-FY12. The results of those funded projects should become apparent in the next few reporting years. In the meantime, the network is working to better connect social science researchers and specialists across programs.
- **Research to Application to Business Start-Up** – Finally, the Focus Team was impressed by examples of Sea Grant’s work leading from research to application to economic impact, captured in the highlighted business start-up impacts below.

## Business Start-Ups

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- ***Massachusetts Start-up Based on MIT Sea Grant sensor***

MASSACHUSETTS INSTITUTE OF TECHNOLOGY SEA GRANT funded research to create a novel, high-speed, low-power 3D sensor for resolving surface profiles for underwater inspection and navigation. In September 2011, primary investigator Doug Hart founded Boston-based Lantos Technologies to create better-fitting, more affordable hearing aid devices building off that technology.

- ***Hull inspection AUV adds \$30 million to local economy***

Between 2003-2007, MASSACHUSETTS INSTITUTE OF TECHNOLOGY SEA GRANT funded two collaborative projects with Bluefin Robotics, a spin-off of MIT’s Autonomous Underwater Vehicle (AUV) Laboratory, to design small, hovering AUVs (HAUVs). In 2011, Bluefin Robotics received a \$30 million contract from the Naval Surface Warfare Center to deliver up to thirty HAUVs for autonomous ship hull inspection.

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## GENERAL COMMENTS ON IMPACT REPORTING AND THE REVIEW PROCESS

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The SCD Focus Team was very impressed with the quality of the 2011 impact statements, and they wanted to make sure the programs received that feedback.

“The impact statements are much improved from 4-5 years ago.”

“The quality of the impacts has just improved volumes.”

“These are so much better written than any we’ve seen before.”

“These were more fun to read and quicker getting to the impact than in the past.”

In designing the 2011 Focus Team reviews, the National Office Focus Team coordinators and chairs decided to send the Focus Teams only the reported impacts for each strategic goal, and not the reported accomplishments, which outnumbered the impacts almost 3 to 1. This is consistent with the way the review process was handled for the 2010 reporting year. It was hoped that this more manageable reading load (still totaling, for SCD, 124 pages of reading material) would still provide an accurate reflection of the programs’ best efforts, while allowing the SCD Focus Team to spend more time reviewing individual impacts. The challenge, however, came in asking the Focus Team to identify “true” gaps in Sea Grant’s Sustainable Coastal Development work. Programs may be addressing these topics through ongoing research projects or extension efforts that are reported as “accomplishments” but which do not meet the level of “impact.” In the following year, the coordinators, chairs, and Focus Teams should work together to determine an optimal balance between manageable volume and thorough review.