

# National Sea Grant College Program



## SUSTAINABLE COASTAL DEVELOPMENT



“Sea Grant offers a tremendous network of dedicated professionals that I can rely on for authentic information and imagery to incorporate into educational workshops and marketing campaigns. Their commitment to funding, supporting and sustaining nature-tourism initiatives is a valuable public service.”

– Joanne McDonough,  
nature-tourism specialist



**Sea Grant**

### THE ISSUE

Population growth and poor development practices along our Nation’s coasts have transformed our coastal landscapes and resulted in increased **habitat loss** and **water quality degradation**, user conflicts, and loss of cultural heritage. With the Nation’s coastal population expected to increase by more than 12 million by 2015, vulnerability to sea-level rise and other effects of climate change will increase exponentially, as will stress on coastal environments. Facilitating coastal community decision making in the face of these challenges is a daunting task, requiring trusted, knowledgeable, on-the-ground expertise in coastal communities.

Sea Grant professionals reside in every coastal and Great Lakes state, working with coastal communities and their citizens to help them understand and use research, tools, and technologies to address these issues and to make informed decisions.

### SEA GRANT WORKS TO:

**Strengthen local economies:** Provide science-based information and strategies that enhance waterfront economic activities while sustaining environmental integrity.

**Ensure public access:** Preserve and enhance public access to the Nation’s beaches and waterfronts through access-related needs assessments, conflict resolution, legal analysis, and technical assistance.

**Support sustainable planning:** Engage coastal communities and decision makers in planning processes that identify and pursue sustainable economic development policies, including renewable energy options.

### SEA GRANT EMPOWERS CITIZENS AND COMMUNITIES

- Conducts environmental and socioeconomic assessments
- Supports renewable energy development and conservation
- Supports working waterfronts and local businesses through planning efforts, legal, and technical assistance
- Engages communities in environmentally and economically sustainable planning practices and policy development to promote sustainable growth
- Trains local managers to make informed decisions
- Provides legal and policy analysis and program evaluation
- Encourages public participation in coastal development issues through outreach, education, and facilitation
- Conducts relevant research and technology development informed by stakeholder needs.

# SEA GRANT IMPACTS: BALANCING HUMAN & ENVIRONMENTAL NEEDS

## Connecticut's Largest City Incorporates New Stormwater Management and Low Impact Development Techniques into City Plan

Over a two year period, Sea Grant assisted staff in coastal Bridgeport, Connecticut's largest city, to update existing stormwater management policies. The Connecticut Department of Environmental Protection sought the assistance of the State's Nonpoint Education for Municipal Officials (NEMO) program to promote adoption of new control and low impact development (LID) techniques. CT NEMO, a partnership between the University of Connecticut Center for Land Use Education and Research and Sea Grant, is recognized for its expertise in educating local communities on the impact of local land use decisions on water quality. NEMO/Sea Grant has offered training and assistance to communities on stormwater management, and developed an online inventory of geo-referenced examples of innovative LID/stormwater management practices across Connecticut. Fifty-two projects are currently in the database, including 23 sites in six coastal towns. Bridgeport has made significant changes to its city plan and technical guidance that allow and encourage the use of LID practices, impervious surface reduction and a renewed focus on sustainability. **The adoption of this standard in May 2008 represents the first time an urban municipality has incorporated LID practices into its standards.** The City plans to use LID practices in future infrastructure upgrades. (CT)



Credit: NOAA

## Sea Grant Works with Citizens to Explore the Human Dimension of Wave Energy Generation

Interest in marine renewable energy has exploded in Oregon since 2003, when Sea Grant-supported research revealed the potential for generating electricity from ocean waves. Developers looked to Oregon to test and launch wave energy technology. Terms like "gold rush" were being used to describe the rush for testing permits. Having already invested in wave energy research, Sea Grant turned its attention to exploring the Human Dimensions of Wave-Energy (HDWE), engaging ocean users in the siting process and helping them consider the costs and benefits. With scientists, graduate students, and other partners, the program began to study socioeconomic and sociopolitical aspects of this new use of ocean space. The HDWE effort consisted of six coordinated research projects to understand the political and regulatory processes surrounding wave-energy and its environmental, social and economic sustainability. Research results informed and guided outreach and engagement efforts. Results also informed policy and decision makers, led to new research projects, and provided valuable input into the creation of new stakeholder groups and efforts. **This effort also helped community-based, issue-related fishing groups to form and actively engage in the development and planning of wave energy facilities.** In short, the Sea Grant HDWE has used the tools of social science research to inform and engage the public and policy makers, so they can base wave energy planning and permitting decisions on the best available information and management practices. (OR)

## Sea Grant Partners to Pioneer Innovative Climate Adaptation Training Program for Coastal Planners

Currently, no official guidance exists in Washington (or in many other states) to assist local jurisdictions in integrating climate change impacts into planning processes. Yet, the need to plan for a resilient future is becoming more apparent as coastal communities face increasing climate risk and more extreme or frequent natural hazards. Working with the Padilla Bay National Estuarine Research Reserve's Coastal Training Program, the University of Washington's Climate Impacts Group and the King County Executive Office, Sea Grant helped develop "Planning for Climate Change," a new adaptation-focused course for shoreline and coastal professionals. Based on an assessment of the needs of more than 200 planners, the training program includes both science and adaptation strategies and is reproducible nationwide. Eighty-five shoreline planners attended the training in 2009 with enthusiastic reviews. Ninety-three percent of attendees reported an improved understanding of adaptation principles and practices and intended to apply them in their jobs. Upon completing the course, participants understood how to apply adaptation action as a risk management tool, and are integrating adaptation-oriented principles into legislatively-mandated planning documents in advance of official state guidance on issues such as sea level rise. **This is the nation's first course on climate change adaptation for coastal planners. It is now being used as a model for similar trainings at Coastal Training and Sea Grant programs around the country.** (WA)

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