Sea Grant
University of Southern California

# THE URBAN OCEAN PROGRAM

2014 - 2015

## Science Serving Urban Coasts

**The Sea Grant Program at the University of Southern California** integrates research, education, and outreach with a specific focus on the 'urban ocean' and the issues arising out of managing people and natural resources in an intensely developed coastline.

- We **connect science to local communities** to solve our most pressing urban ocean problems.
- We **advance scientific literacy and education** among urban residents.

**59,000+**

**People advanced their scientific knowledge through USC Sea Grant activities**

## Funding: Research to Application

**Public investments in scientific research fuel the economic development,** environmental stewardship, and responsible use of California's ocean resources.

**Key Research Achievements:**

- Generated benefits for **red sea urchin fishermen** by restoring kelp habitat in Santa Monica Bay.
- Brought new self-cleaning **aquaculture tank technology** to U.S.
- Created first **database of biofilters** that clean urban stormwater in Los Angeles and San Diego.
- Generated new findings showing that global change may increase the prevalence, size and impacts of **toxic algal blooms**.
- Successfully tested new mobile **beach erosion monitoring tool** used by citizen scientists.

**521**

**Acres of coastal habitat protected, enhanced or restored**

**67**

**Research projects funded**
2001-2015

## Resilient Communities: Coastal Hazard Planning

**USC Sea Grant is deeply invested in local and regional efforts to prepare** for and strengthen the resilience of communities against coastal hazards. Impacts threaten people, beaches, critical infrastructure, and two of the busiest ports in the United States. We are recognized as a leader in coastal hazard planning, training, and technical assistance.

**California issued**

**$2.5 million**

**in grants** for communities to conduct vulnerability assessments as a result of work by USC Sea Grant and partners to identify this critical need.

**We brought in**

**$420,450**

**in grants** to communities to conduct vulnerability assessments and technical trainings in coastal hazard planning.

**We saved more than**

**$150,000**

**in costs** to communities by providng workshops, webinars, and trainings in coastal hazard planning.

**24**

**Communities implemented hazard resiliency practices**

**29**

**Communities implemented sustainable economic and environmental practices**

## Environmental Literacy: Advancing STEM Education

**USC Sea Grant is a regional platform for increasing science literacy** among urban students and encouraging teachers to adopt science education curricula. The broad range of our programs, curricula and place-based learning reaches underserved youth, educators, families, and lifelong learners across California. We are a leader in integrating current research with new education initiatives.

**We reached**

**46,780+**

**students** through educators we trained or directly through our programs

**We engaged**

**41,420+**

**people** in informal education programs supported by our program

**Focusing In: Community-based science programs bring diverse voices** into science and build relationships between scientists and the community.

**We lead:**

**Urban Tides Initiative** to collect data for sea level rise

**HAB Watch** to monitor for harmful algal blooms

**MPA Watch** to monitor marine protected areas

**California Naturalists** to develop effective interpreter programs

**Bioblitz** to conduct biological surveys

**1,219**

**Educators participated in education programs**

**8**

**Curricula adopted by formal and informal educators**

**600**

**Anglers learned about tools to reduce barotrauma**

**6**

**Graduate student trainees supported**

## Ports & Maritime Transportation: Balancing Economic and Environmental Values

**USC Sea Grant has worked on marine shipping issues for more than** two decades as a neutral source of information and expertise on port security, business continuity, port planning, and air pollution. The economic and environmental effects of the ports are felt regionally, and as goods are moved across the nation.

**Key Achievements:**

- Researched **alernative maritime fuels** that reduce shipping emissions and improve regional air quality.
- Evaluated **seaport efficiency** in the United States to gain a full picture of environmental health.
- Determined the **economic impact** of West Coast moorage marinas.
- Led negotiations to **minimize ship strikes on whales** in shipping lanes.

**$4.6 Billion**

**Annual economic value of moorage marinas in Southern California**

**45%**

**Of all marine freight enters the U.S. through the ports of Los Angeles and Long Beach**

http://dornsife.usc.edu/uscseagrant/