

# WHOI Sea Grant Program

## Site Review PIER Information

(Information gathered from the Program's Annual Report Submissions in PIER)

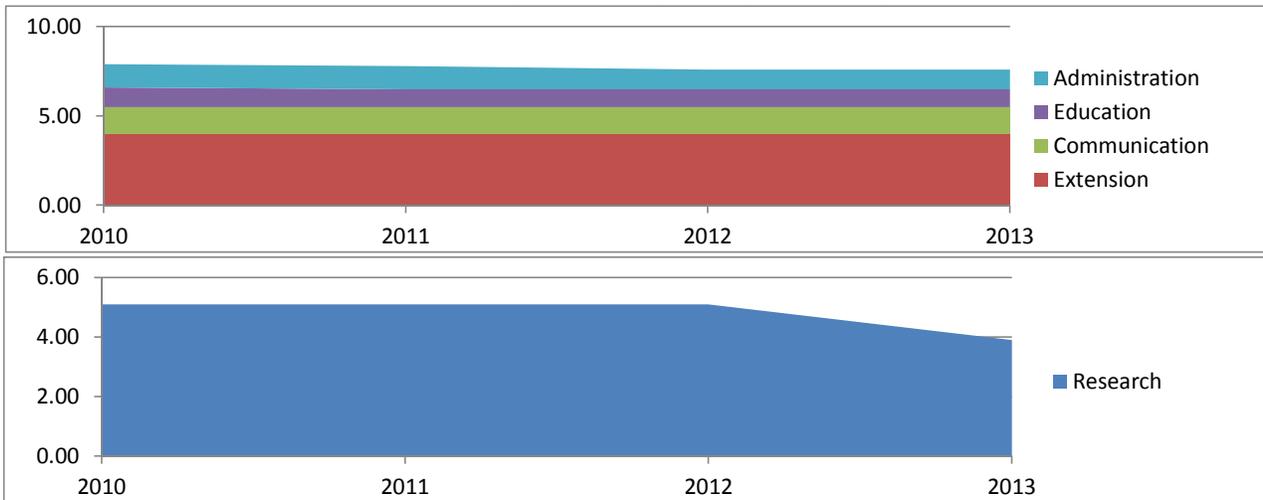
### I. Program Management and Organization (organization, program team approach, support).

#### A. Sea Grant Staffing (2010-2013)

	Range of Annual Number of Individuals	Average Annual Full-Time Equivalents*
<b>Administration</b>	4	1.1
<b>Extension</b>	4	4.0
<b>Communication</b>	3	1.5
<b>Education</b>	1	1.0
<b>Research</b>	26-30	4.8

\*One FTE is equivalent to 12 months of full time effort, and can be funded with Sea Grant Federal or non-Federal dollars.

**Full Time Equivalents by Year (2010-2013)**

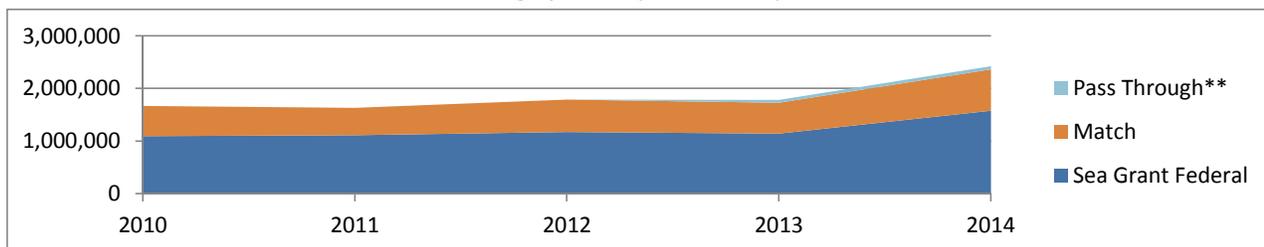


#### B. Total Funding by Source (2010-2014)

	Sea Grant Federal	Match	Pass Through**	Total Funding
<b>2010</b>	1,093,029	574,355	0	1,667,384
<b>2011</b>	1,111,679	518,658	0	1,630,337
<b>2012</b>	1,170,688	622,146	0	1,792,834
<b>2013</b>	1,141,722	588,114	52,500	1,782,336
<b>2014</b>	1,576,130	790,314	56,500	2,422,944

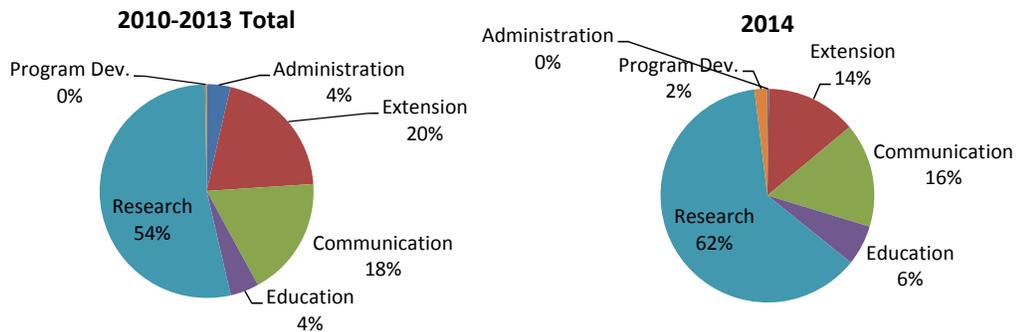
\*\* Pass Through funding refers to federal funds not appropriated to Sea Grant, but administered through the National Sea Grant Office

**Funding by Year (2010-2013)**

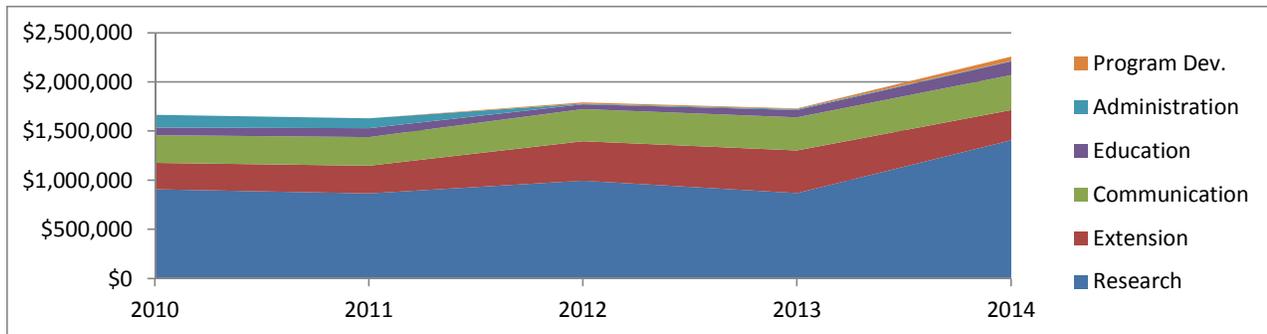


**C. Distribution of Funding by Functional Area (Federal + Match + Pass Through)**

	2010	2011	2012	2013	2014
Administration	130,562	98,986	7,496	7,496	4,992
Extension	269,879	282,431	402,550	433,410	309,706
Communication	280,576	290,346	325,626	339,208	355,915
Education	79,014	92,000	49,000	74,068	136,957
Research	907,353	866,574	996,557	869,499	1,406,719
Program Dev.	0	0	11,605	6,155	43,823



**Trend (2010-2014)**



**D. Total Number of Core Funded Proposals (Not NSIs)**

	2011	2013
Pre-Proposals Submitted	52	52
Full Proposals Submitted	22	22
Proposals Funded	13	12
Institutions with Proposals Funded	10	10
Proposals Funded from Home Institution	8	6

## **E. Core-Funded Research Projects**

### **2014**

Behavioral Responses of Competent Larval Oysters (*Crassostrea virginica*) to Chemical Settlement Cues in Turbulent Flow (Jeanette Wheeler)

Buy out or Build Back? A Comparative Assessment of Approaches to Employing Public Funding to Vulnerable Coastal Properties in the Northeastern United States (Porter Hoagland)

Coastal Hazards and Northeast Housing Values: Comparative Implications for Climate Change Adaptation and Community Resilience (Robert J. Johnston)

Examining Significant Changes to the Nitrogen Cycle in Waquoit Bay (R.W. Fulweiler)

Modeling Shoreline Morphological Evolution (Steve Elgar)

Molecular Risk Assessment in Wildlife Using a Non-Destructive Assay (Sibel Karchner)

Nitrogen Pollution and Recovery from Nitrogen Pollution in a Seagrass-Dominated Estuary: A Whole Ecosystem Experiment (Robert W. Howarth)

The Impacts on Increased Nitrogen Loadings on Decomposition in Salt Marshes: Does Eutrophication Enhance Marsh Accretion or Erosion? (Anne Giblin)

A History of Mercury Impacts to Waquoit Bay Clams (Carl Lamborg)

Beyond Fish Passage: Variability in Nursery Habitat and Its Influence on the Feeding, Growth and Survival of the Early Life Stages of River Herring (Joel Llopiz)

Outreach: Future Flood Losses due to Sea Level Rise (Greg Berman)

Social and Ecological Factors Influencing Shoreline Hardening in the Northeast: Implications for Vulnerability, Resilience and Informed Decision Making (Jonathan Grabowski)

Development of an Automatic Mass Stranding Alert System (Laela Sayigh)

Future Research Competition (Judith E. McDowell)

'Rust Tides' of the Toxic Dinoflagellate *Cochlodinium polykrikoides* in Buzzards Bay (Jefferson Turner)

### **2013**

Reconciling Distributional Patterns With Foraging Processes in an Ecological Hotspot: Aggregation of Humpback Whales, Prey Abundance and the Distribution, and Shoaling of Non-Linear Internal Waves (Jesus Pineda)

Shifts in greenhouse gas emissions and productivity of coastal wetlands in response to anthropogenic N loading and rising sea level (Serena Moseman-Valtierra)

### **2012**

Giardia and Cryptosporidium in Cape Cod Seals and Their Flounder Prey: Issues of Fish, Seal, Fisherman and Consumer Health (Michael Moore)

Investigating Decadal-Scale Changes at the Base of the Georges Bank Food Web Through the Use of Compound-Specific Stable Isotope Analyses of Haddock Scales (Simon Thorrold)

Mechanisms for Success and Potential Impacts of an Invasive Seaweed "*Heterosiphonia*" *japonica* in New England Coastal Waters (Matthew Bracken)

Modeling as a Tool to Better Understand Bay Scallop Recruitment and to Manage Bay Scallop Populations (Geoffrey Cowles)

Multi-Cropping Shellfish and Macroalgae for Business and Bio-Extraction (Scott Lindell)

Passive Acoustic Monitoring of Biological Sounds and Ambient Noise Levels at the Proposed Cape Wind Site (T. Aran Mooney)

Quantifying the Impact of Low Oxygen Conditions on Sediment Methane Fluxes in Waquoit Bay (Robinson Fulweiler)

Regional: Climate change adaptation and ecosystem service resilience in Northeast coastal communities (NESGC) (Robert Johnston)

Regional: Decision-support for the economic analysis of trade-offs in coastal and marine spatial planning (CMSP) for the US Northeast region (NESGC) (Porter Hoagland)
Regional: Social and economic impact assessment of catch share management in the Northeast multispecies fishery. (NESGC) (Christopher Glass)
Transgenerational Exposure of Bay Scallops to Ocean Acidification (Meredith White)
Regional: The governance role of local authorities in marine spatial planning: a legal assessment of prospects and problems. (NESGC) (John Duff)
It's Noisy Out There! Using Dolphins and Whales to Teach Students about How Humans Influence Coastal Ecosystems (Laela Sayigh)
<b>2010</b>
Alternative Nitrogen Cycling Pathways: When Does Nitrate Disappearance Alleviate Eutrophication? (ANNE E. GIBLIN)
Assessing The Impact of Hypoxia/Anoxia on Sediment Denitrification and the Production of Nitrous Oxide in Waquoit Bay (Robinson Fulweiler)
Assessment of Movement Patterns and Spawning Site Fidelity of Female Horseshoe Crabs via Telemetry: Implications for Management of the Fishery (Robert Glenn)
Characterizing the Variability of the Outer Cape Coastal Current (Glen Gawarkiewicz)
Controls on Calcification by Shellfish: Carbonate Chemistry of Bays and Estuaries in Southeastern Massachusetts (DANIEL C. MCCORKLE)
Developing New Institutions for Managing Ocean Zoning (DR. PORTER HOAGLAND)
Does Epiphytic Nitrogen Fixation Lead to a Spiral of Increasing Eutrophication in Shallow Estuaries? (Roxanne Marino)
Giardia and Cryptosporidium in Cape Cod Seals and Their Flounder Prey: Issues of Fish, Seal, Fisherman and Consumer Health (REBECCA GAST)
Mitigating Risk to Whales from Lobster Fishing (Hauke Kite-Powell)
Modeling as a Tool to Better Understand Bay Scallop Recruitment and to manage Bay Scallop Populations (JAMES CHURCHILL)
Ocean Acidification Impacts on Larval Shell Formation by Commercial Shellfish Species of New England: An Experimental Investigation (Anne L. Cohen)
Essential Fish Habitat: Quantifying the Roles of Euphausiid Behavior and Physical Aggregation Mechanisms in the Canyons of the New England Continental Shelf Break Using Broadband Acoustic Techniques (Judith McDowell)

**F. NSI, Pass-through, and enhancement funds**

<b>2014</b>
2014 Knauss Fellow (Li Ling Hamady) (Woods Hole Oceanographic Institute) (NSF)
2014 Knauss Fellow (Whitney Bernstein) (Woods Hole Oceanographic Institute) (SG-FEL-KNAUSS)
Marine Extension Program (Diane Murphy) (SG-Climate)
Social and Ecological Factors Influencing Shoreline Hardening in the Northeast: Implications for Vulnerability, Resilience and Informed Decision Making ) (Jonathan Grabowski) (SG-Social Science )
shellfish growing areas (Roxanna Smolowitz) (SG-Aquaculture)
<b>2013</b>
Increasing Public Awareness of Safe and Healthy Shellfish Consumption (Joshua Reitsma) (SG-Aquaculture)
Knauss Fellow-Kress (Woods Hole Oceanographic Institute) (SG-FEL-KNAUSS)
Knauss Fellow-Owens (Woods Hole Oceanographic Institute) (ARMY)
<b>2012</b>
End-User engagement for improved projections of local sea-level change and tropical cyclone activity (Gregory Berman) (SG-Climate)
End-User engagement for improved projections of local sea-level change and tropical cyclone activity (Gregory Berman) (SG-Social Science )
Knauss Fellow-Parry Tyler (Judith McDowell) (SG-FEL-KNAUSS)
<b>2011</b>
Knauss Fellow Ellis-Hibbert (Judith McDowell) (SG-FEL-KNAUSS)
Knauss Fellow-Dean (Judith McDowell) (SG-FEL-KNAUSS)
<b>2010</b>
3D Visualization of Sea Level Rise Impacts on a Mixed-use Coastline, Cape Cod, Massachusetts (Judith McDowell) (SG-Climate)
Knauss Fellow-Cialino (Judith McDowell) (SG-FEL-KNAUSS)

II. **Stakeholder Engagement** (relevance, advisory services, and education and training).

A. **Total Number of SG-Sponsored Meetings, Workshops, Conferences, Presentations and Attendees (2010-2013)**

Events	Attendees
313	14,369

B. **Total Number of Volunteer Hours (2010-2013)**

5,588
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C. **Students Supported (2010-2013)**

	Students		Degrees Awarded
	New	Continuing	
Undergraduate	6	4	0
MS/MA	14	12	2
PhD	1	9	3
Professional Degree	0	0	0

D. **K-12 Students Reached (2010-2013)**

20,250
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### III. Collaborative Network Activities (relationships and coordination).

#### A. Program Partners by Scale

##### **FEDERAL or NATIONAL**

Dauphin Island Sea Lab  
Federal Emergency Management Agency (US DHS, FEMA)  
National Oceanic and Atmospheric Administration (US DOC, NOAA)  
National Sea Grant Office (US DOC, NOAA, OAR, NSGO)  
U.S. Representative Sam Farr - California  
Waquoit Bay National Estuarine Research Reserve (WBNERR)  
Office of Polar Programs (NSF)

##### **LOCAL**

Cape Cod Commission  
New England Aquarium  
Pleasant Bay Alliance  
Provincetown Center for Coastal Studies

##### **STATE**

Barnstable County Cape Cod Cooperative Extension  
Boston University (BU)  
Bowdoin College  
Cornell University  
Duke University, Provincetown Center for Coastal Studies  
Marine Biological Laboratory (MBL, WHOI)  
Marine Policy Center (WHOI)  
Massachusetts Department of Agricultural Resources  
Massachusetts Division of Marine Fisheries  
Massachusetts Division of Marine Fisheries (MA DMF)  
Massachusetts Lobstermen's Association Inc.  
Massachusetts Office of Coastal Zone Management (CZM)  
MIT/WHOI Joint Program in Oceanography / Applied Ocean Science & Engineering (MIT, WHOI)  
Roger Williams University (RWU)  
Tufts University  
University Of Massachusetts At Amherst (Umass)  
University of Massachusetts, Dartmouth  
University of Rhode Island (URI)  
Woods Hole Oceanographic Institution (WHOI)  
Woods Hole Oceanographic Institution Sea Grant (WHOI)

##### **Unknown**

Cape Cod Cooperative Extension  
National Wildlife Research Centre, Environment Canada  
Southeastern Massachusetts Aquaculture Center (SEMAC)  
Waquoit Bay National Estuarine Research Reserve  
Woods Hole Oceanographic Institution  
Woods Hole Oceanographic Institution  
Cape Cod Commission, Cape Cod Cooperative Extension

B. Source and Amount of Leveraged Funds (2010-2013)	
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<b>Amounts</b>	<b>Year</b>	
<b>Source</b>	<b>2010</b>	<b>2011</b>
<b>Managed</b>	<b>\$100,000</b>	<b>\$100,000</b>
Southeastern Massachusetts Aquaculture Center (SEMAC)	\$100,000	
Unreported Source		\$100,000
<b>Influenced</b>	<b>\$741,489</b>	<b>\$820,000</b>
Coastal Ocean Program (US DOC, NOAA, NOS, NCCOS, COP)	\$500,000	
Woods Hole Oceanographic Institution (WHOI)	\$241,489	
Unreported Source		\$820,000