

2014

Maine Sea Grant Annual Report 2014

Maine Sea Grant

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Maine Sea Grant Annual Report to the University of Maine Vice President for Research
for the period beginning February 1, 2014 and ending January 31, 2015

Executive Summary

We are pleased to provide the 2014-2015 annual report for the Maine Sea Grant College Program. Maine Sea Grant is highly engaged with the academic and science community in Maine and places emphasis on maintaining important relationships with the stakeholders who live, work and recreate on Maine's coast. Through our programming and our position as a research center at the University of Maine, we have strong connections across all parts of UMaine and other campuses in the UM System. Our presence also extends outside of Maine, with many partnerships and co-investments throughout the nation with other Sea Grant programs. Maine is clearly a leader in our work and in our network, and Maine Sea Grant continues to be a highly rated program.

Major Accomplishments

Sea Grant advances Maine's sea vegetable industry

Globally, seaweeds represent an \$8 billion industry, which presents several opportunities to fishermen and sea farmers in Maine's coastal environment, especially given the continued restrictions in several major state and federal fisheries. With support from her partners and other Marine Extension Team (MET) members, Sarah Redmond is leading the effort to bring local sea vegetables to market through research, education, and outreach. New nursery cultivation techniques for native species are under development with Sea Grant support, and funding from the Maine Aquaculture Innovation Center provided for transfer of seaweed cultivation technology to industry. In 2014, Sea Grant provided approximately 5,600 feet of seeded lines to 9 sea farmers, 1 educational facility, and 1 aquaculture researcher for trial on their farms. Restaurants, food trucks, and chefs are experimenting with wild and cultured seaweeds, and consumers are learning about the ecology, variety, and benefits through outreach and education. Support from Sea Grant enabled 6 new sea farms to be established in 2014, and has led to the development of new options for sea farmers and new products at Maine businesses, including a kelp beer, seaweed ice cream, and seaweed bagels. Sea Grant supported the first ever Maine Seaweed Festival, which brought together seaweed producers from the wild harvest and aquaculture industries, businesses, food trucks, chefs, educators, students, consumers, and families to celebrate and learn about Maine's seaweeds.

Sea Grant provides aquaculture training for commercial fishermen in Maine

Uncertainty and decreasing opportunity in Maine's commercial marine resources has fishermen looking for alternatives, such as aquaculture. Training and support increase the chances of success for new aquaculture businesses. In 2013, Extension Team members, Dana Morse and Sarah Redmond, began working with partners to develop an 11-week training course for two cooperatives of fishermen in Harpswell and Corea, Maine. The group created a comprehensive curriculum for delivery to 12 fishermen, including tours of existing aquaculture operations. University of Maine researchers are studying the process, and measuring the changes in perception and knowledge that can accompany training. One fisherman began a new marine aquaculture business producing oysters and mussels, with others in preparatory stages. Meanwhile, commercial shellfish harvesters and lobstermen in the towns of Brunswick and

Harpswell requested that the course be offered again to their communities. Twenty fishermen are registered for the 2015 course.

Sea Grant supports, enhances, and expands the Gulf of Maine's nearshore scallop fishery

The wild sea scallop fishery in the coastal Gulf of Maine is characterized by low volume, high quality, and high prices. Industry and managers are making progress in rebuilding the resource, raising interesting questions about scallop biology and population dynamics, while some fishermen have sustained interest in scallop aquaculture and additional scallop products, but they are limited by Maine laws that prohibit the sale of whole or "roe-on" scallops. In response, Sea Grant helped sponsor and organize the first ever U.S.-Canada Scallop Summit, where 35 representatives of science, management, industry and educational institutions addressed issues related to resource management, the current state of scientific knowledge, and information exchange. After the Summit, four collaborative scallop research projects were selected for funding in 2014-2015. Through program development funding and extension work by Dana Morse, Sea Grant also supported experiments in scallop aquaculture along the Maine coast to develop baseline data on biotoxin loads of cultured scallops. Informed by the results of these culture experiments, the Maine Department of Marine Resources updated their Memorandum of Understanding with scallop aquaculturists to permit sales of scallop products other than just adductor muscles. For the first time in Maine, at least four new scallop farms sold live product to restaurants (\$2,000), and at least two producers sold wild-collected scallop seed (\$1,000).

Sharing knowledge of tidal energy impacts on marine fisheries

As new ways of generating energy from renewable sources emerges, researchers are called upon to answer questions about impacts on the environment, wildlife, and fish. In Cobscook Bay, Sea Grant-supported UMaine researchers, Gayle Zydlewski and Jim McCleave, studied the effects of the first grid-connected tidal energy device on local fish populations. Zydlewski and graduate student Haley Viehman traveled to Japan in January 2015 to present methods and results from the project at Hirosaki University and Hokkaido University. They met with researchers interested in the sustainable development of tidal energy in Japan, delivered lectures to undergraduate and graduate students, faculty, and the public. The visit resulted in the development of an exchange program between the graduate schools at Hirosaki University and University of Maine.

Sea Grant facilitates planning for ocean acidification

Increasing concentrations of carbon dioxide in the atmosphere lower the pH of the global ocean, with potential damaging effects on marine ecosystems, such as impaired growth and development of shellfish resources. Established under the Northeastern Regional Association of Coastal and Ocean Observing Systems, the Northeast Coastal Acidification Network (NECAN) is a partnership among government agencies, industry and the scientific community. NECAN is the leading organization for the synthesis and dissemination of regional ocean and coastal acidification data and information from Long Island Sound to the Scotian Shelf. Sea Grant/Cooperative Extension Marine Extension Team member, Esperanza Stancioff, is a member of the NECAN steering committee, and helps lead the group as it works to share information and provide guidance and connectivity for regional research and monitoring efforts. NECAN now has a listserv with more than 300 subscribers, 16 webinars, a science synthesis, and the first in a series of regional Stakeholder Engagement Workshops.

Maine Sea Grant helps communities plan for workforce housing

Housing costs in southern Maine coastal communities are largely unaffordable to the local workforce: the majority of residents spend more than 30% of their income on housing. Working to address this issue in partnership with the Workforce Housing Coalition of the Greater Seacoast, Extension Team member, Kristen Grant, has provided southern Maine and New Hampshire coastal communities with opportunities to plan for future housing needs through "charrette" design workshops. Grant chaired the charrette committee in 2014, implementing charrettes in both York, ME, and Stratham, NH. She led fundraising efforts resulting in successful grants and donations exceeding \$12,000. The charrette design workshops engaged communities in conversations about the disconnect between income and housing costs and the need to plan for the housing needs of the community's workforce. As a result, officials in York are considering the expansion of the municipal Workforce Housing Overlay District in response to needs identified in the charrette. Similarly, Kittery continues to evaluate a Village Overlay District and design future construction of workforce housing.

Maine Sea Grant supports coastal communities through the Downeast Fisheries Trail

In Downeast Maine, where fisheries continue drive much of the economy and culture, coastal communities desire creative ways to offer meaningful ways for visitors and residents to connect to both past and present fisheries heritage. Developed with leadership from Extension Team member, Natalie Springuel, and support from the Sea Grant communications team, the Downeast Fisheries Trail has become an important feature in a growing collaboration between the Maine Office Tourism and the New Brunswick Department of Tourism, Heritage, and Culture. The two jurisdictions have recently launched the "Two Nation Vacation." Maine Sea Grant's role is to highlight the region's cross-border fisheries heritage and to foster connections between the tourism industry and the fisheries/aquaculture industry in both nations. In 2014, the Downeast Fisheries Trail also began collaborating with Penobscot Marine Museum and other partners to create a unified Maine coast-wide initiative, Experience Maritime Maine, intended to strengthen the accessibility of maritime heritage and recreational activities for visitors to Maine's coast. Primarily through work on the Downeast Fisheries Trail, Sea Grant has emerged as a leader and valued partner in connecting fisheries and aquaculture with tourism in Maine.

Program Highlights

In order to ensure compliance with the NOAA National Sea Grant Program's standards of excellence for stakeholder engagement, program management, and collaborative networking with NOAA and other partners, state Sea Grant programs hosts a Site Review every four years. A five-member Site Review Team visited the University of Maine October 7-8, 2014. The team met with numerous program partners and stakeholders, with University of Maine leadership, and with the Maine Sea Grant Policy Advisory Committee. In their final glowing report, they called Maine Sea Grant a "highly successful and well-managed organization." The team endorsed Maine Sea Grant's approaches to stakeholder engagement, program management, and partnership, and identified Maine Sea Grant's biennial Research Symposium as a best management practice for the National Sea Grant Network. The report also commended "the impressive capacity of the [Sea Grant] personnel to function as a well-integrated team that is capable of addressing a large number and wide variety of important issues, despite its small staff size and the large size of Maine with an extensive coastline."

I. Overview

The University of Maine is a federally designated Sea Grant College. The Maine Sea Grant College Program is supported by the National Oceanic and Atmospheric Administration and the State of Maine. Part of a network of 34 programs across the nation's coastal and Great Lakes states and territories, Sea Grant supports marine and coastal research, education, and outreach.

Mission

Our mission is to play a leadership role in marine science and education and to promote the sustainable use and stewardship of marine and coastal resources.

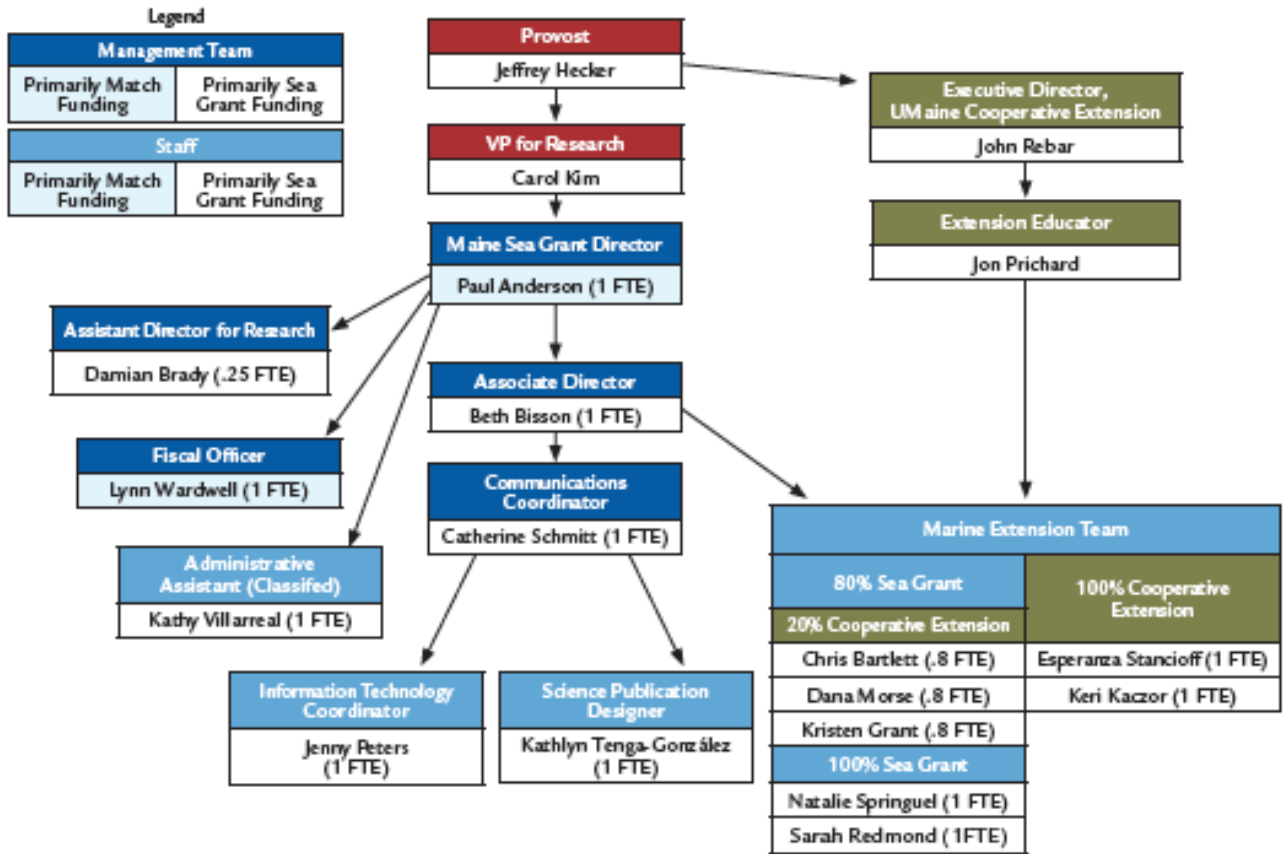
Vision

Our vision, from our current strategic plan, is a Maine where people recognize that healthy ecosystems are the foundation of resilient communities, and act to ensure the long-term health of coastal resources. Maine's coastal communities include viable neighborhoods, thriving waterfronts, and businesses that draw upon and maintain their natural and cultural heritage. Wild harvest and culture fisheries and the communities that depend on them are economically viable and environmentally sustainable. Maine has a diverse workforce skilled in science, technology, engineering, mathematics, and other disciplines critical to the ecological health, economic vitality, and resilience of Maine's coastal communities and ocean-related resources.

Status of strategic plan

Our current Strategic Plan (seagrant.umaine.edu/strategic-plan) covers the four-year period from 2014 to 2017. The plan, which is in alignment with the National Sea Grant Strategic Plan and has been approved by NOAA Sea Grant, reflects our intent to continue to provide high-quality, science-based information, outreach, education, and support needed by Maine's coastal communities as they face economic and environmental transitions of the early 21st century.

Administration and staffing structure



II. Serving Maine

Community engagement

Our primary means of engaging stakeholders is through the Marine Extension Team (MET), a formal partnership with the University of Maine Cooperative Extension. Ten professionals are based in coastal communities from Wells to Eastport. The Marine Extension Team performs the traditional “extension” function of connecting scientific researchers and coastal stakeholders. The specific communities engaged in Sea Grant programming vary from year to year, but 2015 collaborations can be found in the partner list in [Appendix A](#).

Economic development

Economic impact	Businesses created	Businesses retained	Jobs created	Jobs retained
\$95,000	4	4	6	12

Workforce development

Maine Sea Grant provides a range of student opportunities, which facilitate multiple interactions and support for students as they complete their academic degree programs and gain professional experiences. The Maine Sea Grant Scholar program, initiated in 2011, supports a student’s first year in UMaine’s dual master’s degree program in marine policy and science. Five public and private undergraduate institutions in Maine have committed to matching \$500 in Sea Grant scholarship funding for any successful applicant from their own institution. Scholarship funds may be used for academic research, tuition, professional development, or other academic expenses related to awardees’ marine or coastal studies. (See undergraduate student award section below).

Maine Sea Grant also supports a variety of education and professional training programs. Our funding criteria favor meaningful involvement of K-16 and graduate students, and our education and citizen science programs involve stakeholders of all ages in research and stewardship. Marine Extension Team activities typically include support for graduate and undergraduate students in addition to providing professional training to stakeholders.

Maine Sea Grant recruits applicants for several NOAA fellowship programs each year. In 2014, we were honored to have three Maine students selected for the National Sea Grant John D. Knauss Fellowship in Marine Policy, Class of 2015. They are: Jeffrey Vieser (‘14 UMaine Dual Master of Marine Biology and Marine Policy), Andrew Strohsahl (‘14 J.D., Maine School of Law), and Lianna James (‘14 J.D., Maine School of Law).

Collaborations with UMaine System campuses

Karen Wilson of University of Southern Maine, research funding, “Variation in habitat use by juvenile river herring in the Penobscot River.”

Brian Beal of University of Maine at Machias, research funding, “Spatial and temporal variation in growth of soft-shell clams.” Additional projects include Signs of the Seasons, ocean acidification, Downeast Institute, rockweed working group, blue mussel aquaculture trials.

Leonore Hildebrandt, University of Maine at Machias, *The Catch* editorial board.

Andrew Barton, University of Maine Farmington, climate change outreach.

Collaborations with other outside institutes/organizations

A list of partners from 2015 is attached in [Appendix A](#).

III. Financial Sustainability

<i>E&G Support; salary and operating support</i>	NA
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<i>MEIF Support</i>	\$752,838 (includes fringe benefits and indirect)
<i>Research Funding; Submitted and Awarded, Trends</i>	<p>Awarded:</p> <p>\$25,379: NOAA Penobscot Habitat Blueprint:</p> <p>\$21,717: Commercializing the successful pilot-scale culture of sea scallops in Maine, MAIC</p> <p>\$56,590 SEANET (Sea Grant portion)</p> <p>\$46,206: Northeast Sea Scallop Summit and Funding for Collaborative Research (Broad Reach Foundation)</p> <p>\$14,999: Improving profitability of fishermen by expanding specific financial and business planning resources (S-K/UMinn)</p> <p>\$10,137: The development of sustainable, multi-seasonal, multi-species, marine algal aquaculture in coastal Maine (SBIR/Maine Fresh Sea Farms)</p>
<i>Brief overview of each major new award</i>	Funding during 2014 was omnibus year one, including Maine Sea Grant administration, communications, extension, and climate change-related projects.
<i>Return on Investment</i>	<p>\$1,198,119 Total</p> <p>\$905,000 NOAA Base/Core/CCD Funding</p> <p>\$128,000 NOAA Merit Funding</p> <p>\$30,000 NOAA Climate Adaptation</p> <p>\$98,678 NOAA (increase in Core Funding)</p> <p>\$25,088 NOAA (increase in Merit Funding)</p> <p>\$11,353 NOAA Social Science Funding</p> <p style="margin-left: 40px;">i. External Awards Received / University Funding (University funding to include any E&G and MEIF, that is not revenue, supporting department operations, salaries and their benefits)</p>

Initiatives to increase fiscal efficiency

Maine Sea Grant continuously strives to make the most effective use of its limited funding dollars and to be as efficient as possible without sacrificing the quality of our work.

IV. Culture of Excellence

Faculty and staff achievements (e.g., awards, recognitions, prestigious appointments etc.)

- Paul Anderson, appointed Director of the NSF EPSCoR Sustainable Ecological Aquaculture Network
- Dr. Damian Brady appointed as Research Director for Maine Sea Grant
- Beth Bisson, promoted to Associate Director
- Catherine Schmitt, promoted to Communications Director
- Catherine Schmitt, elected to the Maine Writers & Publishers Alliance Board of Trustees
- Keri Kaczor/Maine Healthy Beaches Program, Northeast Regional Sea Grant Nomination for Sea Grant Extension Assembly Superior Outreach Programming Award 2012-2014
- Sarah Redmond, invited participant, 2014 Maine Sustainable Food Leadership Institute

Research and scholarship summary

In 2014, Maine Sea Grant activities resulted in

15 peer-reviewed publications.

60+ print and digital publications, including technical reports, fact sheets, websites, interpretive panels, radio programs, videos, and articles.

173 presentations to professional and public audiences, attended by approximately 23,700 people.

132 Sea-Grant sponsored or organized workshops, meetings, and conferences attended by more than 7,000 people.

See [Appendix B](#) for a complete list.

Curricular innovations/integration with the UMaine education mission

Catherine Schmitt is an adjunct in the English Department. She taught ENG 212, Persuasive and Analytical Writing, in Spring and Fall 2014.

Beth Bisson is a member of the UMaine K-12 Outreach Network, which works to identify and leverage opportunities to collaborate on multidisciplinary educational programming and maximize engagement of K-12 teachers and students in STEM learning opportunities and resources supported by UMaine.

V. Student Engagement, Student Success

Undergraduate student research, scholarship or creative activities

Maine Sea Grant supported a total of 17 undergraduate students, 5 from UMaine, through internships, scholarships, program development awards, and research, outreach, and monitoring activities associated with Marine Extension Team research and extension programs.

Undergraduate student awards

UMaine undergraduate student, Mackenzie Mazur, was selected as a Maine Sea Grant Scholar. She will begin the School of Marine Sciences dual degree program in September 2015.

The following UMS undergraduates received Maine Sea Grant Undergraduate Scholarships in Marine Sciences for the 2014-2015 academic year: Tyler Carrier, Mackenzie Mazur, and Benjamin Reed (UMaine), and Zachary Vetack (UMM). Tyler Carrier also received a Maine Sea Grant program development award for his independent research project, which explored the effects of *Alexandrium* spp. on sea urchin larvae.

Graduate student research, scholarship or creative activities

Maine Sea Grant supported a total of 25 graduate students, 18 from UMaine, through research and program development awards, the Maine Sea Grant Scholar Program, NOAA and Sea Grant graduate fellowship programs, and opportunities related to Marine Extension Team programs.

Graduate student awards

Samuel Belknap, Best Student Presentation, UMaine Climate Change Institute Borns Symposium, "Planning for a changing climate: a participatory approach to fishing."

Laura Whitefleet-Smith, Best Graduate Student Poster, New England Estuarine Research Society, "Species identification of hake in Maine markets."

Retention and graduation numbers, initiatives

NA

Degrees granted

Maine Sea Grant does not grant degrees directly, but we count the numbers of Sea Grant-supported students who earn undergraduate or graduate degrees during each reporting period. In 2014, 12 UMaine students (one undergraduate and two graduate) received degrees.

Highlighted student profile

Alexander Gray, who earned a 2012 master's degree from the UMaine Department of Ecology and Environmental Science, worked as a graduate research assistant on several Sustainability Solutions Initiative and NOAA Sea Grant-funded projects related to stormwater infrastructure planning and climate change resilience in Ellsworth and Lincolnville. The experience and expertise he gained as a student research assistant allowed him to continue this work with UMaine researchers, Maine Sea Grant and UMaine Cooperative Extension staff, and municipalities after he earned his degree. He continued to support the effort as a professional Sustainability Research Coordinator as the suite of related projects evolved between 2012 and 2014. Building on his professional connections and knowledge in the fields of climate change

adaptation and sustainability science, he then accepted a position for similar work with Catalysis Adaptation Partners, LLC, in Freeport, where he worked until May 2015. He has recently accepted a new Adaptation Specialist/GIS Analyst position with GEI Consultants, Inc, in Portland, Maine. Gray is an example of how Maine Sea Grant’s multifaceted workforce development approach has resulted in a “Sea Grant Family” of undergraduate and graduate students who are involved in or supported by Maine Sea Grant with opportunities to connect with and learn from older students, researchers, and professionals in their chosen fields.

VI. Preserving-Restoring Infrastructure

NA

VII. Summary of Anticipated Challenges

Maine Sea Grant continues to be over-subscribed. We are desirable partners with a reputation for getting things done. Our Marine Extension Team members are highly productive, as demonstrated in this annual report, and often find themselves in the difficult position of having to limit new projects and programs due to time constraints. Meanwhile, the availability of program funds from various sources continues to dwindle, and therefore the Sea Grant Program Development funds have also become very competitive. This pressure on our resources causes us to focus more and be as strategic as possible in selecting partnerships and programs to support. The challenge associated with these constraints is that we are also promoting engagement and the application of science in decision-making. These efforts help to foster the need for more resources by our staff and by our partners. Part of the solution to these types of challenges is to apply creative thinking to the identification of external funding sources and to maximize the leveraging our own resources and time to secure those funds.

We have to pay attention to our strategic priorities and make sure that we are delivering on our commitments to NOAA and to the University of Maine. These are occasionally different from what our partners are seeking and we must be willing to hold to course and say “no” to some of these requests for involvement. At the same time, we need to allow for creativity and see emerging needs and opportunities that fit into our portfolio and position us and the network to deliver important impacts and outcomes.

Although community resilience is today’s “buzzword,” Sea Grant has been helping communities prepare for and respond to change for more than three decades. The new parlance may provide additional funding opportunities and interesting partnerships possibilities that allow us to continue our work in seafood, ecological health, and community development, but provides a new frame by which to aggregate and enhance impacts and outcomes.

VIII. Summary of New Initiatives

Some of Maine Sea Grant’s newer initiatives include:

- Maine Sea Grant’s extension team is supporting some of the community engagement needs for the Sustainable Ecological Aquaculture Network (SEANET) EPSCoR research project.

This engagement is critical to the long-term success of this complex, multi-institutional, transdisciplinary research program.

- The Marine Extension Team has a long-lived association with WERU-FM Community Radio in Blue Hill, Maine and this year we started our own monthly program, “Coastal Conversations.” This one-hour program is broadcast live with a topical focus for each show, a panel of experts and community members, and call-in, which allows for audience engagement.
- Maine Sea Grant is contributing to the emerging “Aging Initiative” at UMaine by making available the many citizen science initiatives that can allow for elders to participate in data collection and to remain intellectually engaged.
- Our region is grappling with several challenges associated with climate change, and members of the Marine Extension Team are taking a leadership role in the organization and management of the Northeast Coastal Acidification Network (NECAN). This group of scientists, agency and NGO representatives are facilitating the development of research needs assessments, monitoring programs, educational initiatives, and policy discussions.

APPENDIX A: MAINE SEA GRANT PARTNERS, 2014-2015

Acadia National Park
Acadian Seaplants
Aquacoustics
Agriculture Research Service (USDA)
Aquatic Science & Health Services
Argonne National Laboratory (DOE)
Atlantic Coastal Cooperative Statistics Program
Atlantic Lobster Sustainability Foundation
Atlantic States Marine Fisheries Commission
Bates College
Baxter State Park
Bigelow Laboratory for Ocean Sciences
Blue Hill Bay Mussels
Boat U.S.
Bowdoin College
Burnstein Shur Attorneys
Calendar Islands Lobster Company
California Sea Grant
Cape Neddick River Association City of Saco
Casco Bay Estuary Project
Center for Ecological Research
Center for Farm Financial Management, UMN
Centre for Aquatic Biotechnology Regulatory
Research, Centre for Aquaculture and Environmental
Research, Fisheries and Oceans Canada (DFO)
Chinese Academy of Sciences
City of Brewer, ME
City of Ellsworth, ME
City of Guilford, CT
City of Portsmouth, NH
City of Southold, CT
Clark University
Clearwater Lobster
Coastal Enterprises, Inc.
Coastal Maine Botanical Gardens
Coastal States Organization
Cobscook Bay Resource Center
College of the Atlantic
Community Wellness Coalition
Connecticut Sea Grant
Consulate of Canada
Consortium for Ocean Leadership
Cooke Aquaculture
Cornerstones of Science
Dartmouth College
Davis Foundation
Diadromous Species Restoration Research Network
Downeast and Acadia Regional Tourism
Downeast Institute
Downeast Resource Conservation and Development
Downeast Salmon Federation
Drummon Woodsum Law Firm
East Carolina University
Eat Local Foods Coalition of Maine
E+K Shellfish
Farm Service Agency (USDA)
FB Environmental
Federal Energy Regulatory Commission
Fisheries and Oceans Canada
Fishermen and Scientists Research Society
Florida Sea Grant
Friends of Casco Bay
Friends of the Boat School (Eastport)
Friendship International
Frenchman Bay Partners
FV Capt. Lee
FV Ella Christine
FV Lindsay Marie
FV Lost Airmen
FV Leslie and Jessica
FV Skipper
Great Bay Aquaculture, LLC
Georges River Tidewater Association
Gulf of Maine Council on the Marine Environment
Gulf of Maine Council's EcoSystem Indicator Program
Gulf of Maine Research Institute
Hancock County Emergency Management Team
Harvard Forest
Harvard School of Public Health
Herring Gut Learning Center
Honam Sea Grant (Korea Sea Grant)
International Pectnid Workshop
Island Institute
K2 Family Foundation
Lerner Foundation
Lincoln County Regional Planning Commission
Lobster Institute
Long Cove Oyster Company
Maine Aquaculture Association
Maine Aquaculture Innovation Center
Maine Association of Realtors
Maine Assoc. of Sea Kayak Guides and Instructors
Maine Audubon
Maine Beaches Association
Maine Botanical Gardens
Maine Bureau of Parks and Lands
Maine Climate Adaptation Providers Network
Maine Coast Heritage Trust
Maine Coast Sea Vegetables
Maine Coastal Islands National Wildlife Refuge
Maine Coastal Program
Maine Community Foundation

Maine Conservation Corps (AmeriCorps)
 Maine Cooperative Extension Service
 Maine Cooperative Fish and Wildlife Research Unit
 Maine Department of Conservation, Agriculture & Forestry
 Maine Department of Environmental Protection
 Maine Department of Health
 Maine Department of Inland Fisheries and Wildlife
 Maine Department of Marine Resources
 Maine Department of Marine Resources
 Maine Department of Revenue Services
 Maine Department of Transportation
 Maine EPSCoR (NSF)
 Maine Fishermen's Forum
 Maine Geological Survey
 Maine Health Laboratory
 Maine Island Trail Association
 Maine Lobstermen's Association
 Maine Maritime Academy
 Maine Office of Tourism
 Maine Outdoor Heritage Fund
 Maine Research Internships for Teachers and Students
 Maine Seafood Network
 Maine Seaweed
 Maine Soft-shell Clam Advisory Council
 Maine State Legislature
 Maine Tidal Power Initiative
 Maine Working Waterfront Coalition
 Maryland Department of Natural Resources
 Massachusetts Institute of Technology
 Massachusetts Sea Grant
 MDI Water Quality Coalition
 Michigan Sea Grant
 Micro Technologies
 Midcoast Fishermen's Association
 Midcoast Maine Fishing Heritage Alliance
 Middle Peninsula Chesapeake Bay Public Access Authority
 Minnesota Sea Grant
 Mississippi-Alabama Sea Grant Consortium
 Monhegan Boat Lines
 Mount Desert Biological Laboratory
 National Centers for Coastal Ocean Science (NOAA)
 National Fish and Wildlife Foundation
 National Fisherman
 National Marine Fisheries Service (NOAA)
 National Marine Manufacturers Association
 National Oceanic and Atmospheric Administration
 National Park Service
 National Safe Boating
 National Science Foundation
 National Sea Grant (NOAA)
 National Sea Grant Law Center
 National Weather Service (NOAA)
 National Working Waterfront Network
 New Brunswick (Canada) Department of Tourism, Heritage, and Culture
 New England Aquarium
 New Hampshire Climate Adaptation Workgroup
 New Hampshire Coastal Program
 New Hampshire Sea Grant
 New York Sea Grant
 Newfoundland and Labrador Department of Fisheries and Aquaculture
 Normandeau Associates
 North American Kelp
 North Carolina Sea Grant
 Northeast Algal Society
 Northeast Center for Risk Management Education
 Northeast Sea Grant Consortium
 Northeastern Regional Aquaculture Center
 Northeastern University
 Northwest Atlantic Marine Alliance
 Nova Scotia Department of Fisheries and Aquaculture
 Ocean Approved, LLC
 North American Kelp
 Ocean Organics
 Ocean Park Conservation Society
 Ocean Renewable Power Company
 Oceanville Seafood
 Office of International Affairs (NOAA)
 Ogunquit Conservation Commission
 Ogunquit Sewer District
 Ohio Sea Grant
 Oregon Sea Grant
 Peaks Island Shellfish
 Pemaquid Mussel Company
 Penobscot East Resource Center
 Penobscot Marine Museum
 Phoenix Salmon
 Pine Point Oysters
 Pleasant River Wildlife Foundation
 Province of Prince Edward Island
 Quebec Labrador Foundation, Atlantic Center for the Environment
 Recreational Boat and Fishing Foundation
 Rhode Island Sea Grant
 Roosevelt Campobello International Park
 Scallop Advisory Council
 Schoodic Arts for All
 Schoodic Community Fund
 Schoodic Education and Research Center
 Sea Grant Association
 Sea Grant Climate Network

SOS Maine
Source, Inc.
Southern Maine Community College
Southern Maine Regional Planning Commission
Spruce Creek Association
State University of New York, College of
Environmental Science and Forestry
States Organization for Boating Access
Stonington Clam Committee
Sunrise County Economic Council
Surfrider Foundation
Syracuse University
Texas A&M University
Texas Sea Grant
The Lobster Conservancy
The Nature Conservancy
Town of Camden, ME
Town of Gouldsboro, ME
Town of Hancock, ME
Town of Harpswell, ME
Town of Kennebunk, ME
Town of Kennebunkport, ME
Town of Kittery, ME
Town of Lincolnville, ME
Town of Ogunquit, ME
Town of Old Orchard Beach, ME
Town of Old Saybrook, CT
Town of Orrington, ME
Town of Prospect Harbor, ME
Town of Rockport, ME
Town of Scarborough, ME
Town of Saco, ME
Town of South Portland, ME
Town of Sullivan, ME
Town of Wells, ME
Town of Winter Harbor, ME
Town of York Harbor, ME
Town of York, ME
Trust for Public Land
Tufts University
U.S. Representative Chellie Pingree (ME)
U.S.A. National Phenology Network
University of Connecticut
University of Delaware
University of Louisiana at Lafayette
University of Maine
UMaine Advanced Structures & Composites Center
UMaine Aquaculture Research Institute
UMaine Center for Cooperative Aquaculture Research
UMaine Center for Research in STEM Education

UMaine Cooperative Extension
UMaine Department of Biochemistry, Microbiology
and Molecular Biology
UMaine Department of Communications and
Journalism
UMaine Department of English
UMaine Law School and Center for Law and
Innovation
UMaine Office of the Vice President for Innovation
UMaine School of Marine Sciences
UMaine Senator George J. Mitchell Center
University of Maine at Machias
University of Massachusetts at Boston
University of Minnesota
University of New Brunswick
University of New England
University of New Hampshire
UNH Cooperative Extension
UNH Cooperative Institute for Coastal and Estuarine
Environmental Technology
UNH Jackson Estuarine Laboratory
University of Prince Edward Island
University of Rhode Island
University of Rhode Island Cooperative Extension
University of Rhode Island Department of Fisheries,
Animal and Veterinary Sciences
University of Southern Maine
Urban Harbors Institute
US Army Corps of Engineers
US Coast Guard
US Department of Agriculture
US Economic Development Administration
US Environmental Protection Agency
US Fish and Wildlife Service
Virginia Institute of Marine Science
Virginia Sea Grant
Virginia State Legislature
Vitamin Seaweed
Walsh Engineering
Washington County Community College
Washington County Council of Governments
Washington Sea Grant
Wells National Estuarine Research Reserve (NOAA)
West Coast Governor's Alliance
Wild Ocean Aquaculture
Woods Hole Oceanographic Institution
Workforce Housing Coalition
Works of Hand Gallery
Wright-Pierce Engineers
York Conservation Commission

APPENDIX B: SEA GRANT COMMUNICATIONS & OUTREACH 2014

PEER-REVIEWED PUBLICATIONS

- Brewer, J. 2014. Hog Daddy and the Walls of Steel: Catch Shares and Fish Stories in the New England Groundfishery. *Society and Natural Resources* 27(7):724-741.
- Brewer, J. 2014. Harvesting a knowledge commons: collective action, transparency, and innovation at the Portland Fish Exchange. *International Journal of the Commons* 8(1):155-178.
- Burdett-Coutts, V.H.M., R.A. Wahle, P.V.R. Snelgrove, and R. Rochette. 2014. Spatial linkages between settling young-of-year and older juvenile lobsters. *Marine Ecology Progress Series* 499:143-155.
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Anderson, P.A. Coastal Resiliency Capitol Hill Briefing, 23 April 2014, Washington, DC. (50)

Anderson, P.A. The future of the International Sea Lice Conference, 5 September 2014, Portland ME. (300)

Anderson, P.A. The creative no and articulate yes. Georgia Sea Grant (25); New York Sea Grant (20); National Sea Grant Office Knauss Fellows (15); Sea Grant Week Florida (20/15).

Arnold, S., N. Batissta, and H. Deese. Development and dissemination of statewide priorities for addressing ocean acidification (poster). Maine Sea Grant Research Symposium, 3 April 2015, Orono, Maine. (88)

Barrows, A., J. Whelpley, K. Wuesthoff, M. Dwyer, A. Braga, and J. Fortier. Microplastics pollution monitoring project (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Beaty, J., Y. Chen, and M. Ritchie. Can accurate estimates of growth rates be obtained from halibut otoliths? (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Beaty, J., J. Wilson, and Y. Chen. Fishermen's knowledge: not just anecdotal evidence. (poster) Maine Sea Grant Research Symposium, 3 April 2014. (88)

Beaty, J., D. Kircheis, and N. Springuel. Are fishermen observing changes in river herring runs in Downeast Maine? American Fisheries Society, 17-21 August 2014, Quebec, Canada. (40)

Belknap, D.F., and K.R. Wilson. Invasive European green crabs: sudden increase in erosion potential on salt marshes in southern and central coastal Maine: Northeast Aquaculture Conference and Exhibition, 14-16 January 2015, Portland, ME. (50)

Belknap, D.F. Green crabs implicated in Damariscotta Estuary habitat destruction. Damariscotta River Association, 28 February 2014, Damariscotta, ME. (25)

Belknap, D.F., and K.R. Wilson. Invasive green crab impacts on salt marshes in Maine—sudden increase in erosion potential. Geological Society of America Northeastern Section.

Belknap, D., and K. Wilson. Invasive European green crab impacts on salt marshes in Maine: sudden increase in erosion potential (poster). Maine Sea Grant Research Symposium, 3 April 2015, Orono, Maine. (88)

Belknap, S., Planning for a changing climate: a participatory approach to fishing. Borns Symposium, 18 April 2014, Orono, ME. (60)

Bisson, B. Signs of the Seasons: the timing of natural events, and how they are changing. Belfast Bay Watershed Coalition Evening Program, 20 February 2014, Belfast, ME. (25)

Bisson, B., and E. Stancioff. Signs of the Seasons: A New England Phenology Program (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Bisson, B., and T. Newcomber Johnson. Citizen science within the Sea Grant Network: survey results and next steps. Sea Grant Week Extension Assembly Business Meeting, 8 September 2014, Clearwater Beach, FL. (40)

Bisson, B. Maine Sea Grant Program: Working to build Maine's coastal economy. Penobscot Valley Senior College, 16 January 2015, Bangor, ME. (60)

Brawley, S.H., S. Redmond, C. Quigley, G. York, and N. Brown. 2014. Research support for development of Maine's sea vegetable industry. Maine Seaweed Scene, 27 August 2014, Portland, ME. (130)

Brawley, S.H. 2014. *Porphyra* hatchery and grow-out techniques. Irish Sea Farm Conference, 20 November 2014, Limerick, Ireland. (200)

Brawley, S.H., S. Eddy, C. Quigley, S. Redmond, and G. York. 2015. Development of laver, alaria, and dulse in the University of Maine's sea vegetable nursery facility. Northeast Aquaculture Conference & Expo, 15 January 2015, Portland, ME. (150)

Dimoulas, A., J. Runnebaum, and Y. Chen. Assessing industry's perspective of state and federal management regulations of the Maine lobster fishery. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. New Hampshire Harbormasters' Association Annual Meeting, 4 March 2014. (12)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. Massachusetts Harbormasters' Association Annual Meeting, 21 March 2014. (52)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. Maine Aquaculture Association Meeting, March 2014. (50)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. New Hampshire Aquaculturists' Meeting, 11 April 2014. (22)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. New Hampshire Sea Grant and UNH Cooperative Extension Natural Resources Internship Meeting, 11 April 2014. (15)

Eberhardt, A., B. Bisson, and J. Pederson. Early detection and rapid response program for the Chinese mitten crab. The Nature Conservancy Oyster Conservationists' Meeting, 11 April 2014. (53)

Frederick, C., M. Pietrak, S. Barker, D. Brady, and I. Bricknell. Where are all the sea lice? A first glance at sentinel fish in Cobscook Bay. Sea Lice 2014, 31 August-5 September 2014, Portland, ME. (200)

Frederick, C., M. Pietrak, S. Barker, D. Brady, and I. Bricknell. Secretory/excretory products of *Lepeophtheirus salmonis* regulate salmon leukocyte migration in vitro. Sea Lice 2014, 31 August-5 September 2014, Portland, ME. (200)

Grant, K. Beach profiling. Newcomers Club, 3 February 2014, Kennebunkport, ME. (30)

Grant, K. Beach profiling. Ogunquit Shoreline Erosion Committee, 9 June 2014, Ogunquit, ME. (15)

Grant, K. Results of York Charrette. Town of York Board of Selectmen 15 December 2014, York, ME. (19)

Grant, K. National Working Waterfront Network. Social Coast Conference, 20 February 2014. (42)

Grant, K. National Working Waterfront Network Tools Café. Social Coast Conference, 19 February 2014. (12)

Grant, K. National Working Waterfront Network. National Association of Development Organizations (webinar), 7 March 2015. (72)

Grant, K., J. Cannon, and J. Aman. Storm Teams: collecting real-time beach erosion data (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Grant, K. National Working Waterfront Network. The Coastal Society/Restore America's Estuaries Joint Conference, 5 November 2014. (19)

Gray, A., Stancioff, E. Vulnerable culverts: adapting infrastructure for extreme rainfall events. Casco Bay Region Climate Change Adaptation Regional Resiliency Assessment Project, 6 August 2014, Portland, ME.

Guan, L., Y. Chen, and J.A. Wilson. Potential consequences of possible mismatched ecological and regulatory scales on the stock assessment and management of Gulf of Maine cod fishery. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Hogg, R., S.M. Coghlan Jr., J. Zydlewski, and K.S. Simon. Anadromous sea lampreys recolonize a Maine coastal river tributary after dam removal: ecosystem engineers? Oregon Chapter of the American Fisheries Society Annual Meeting, Corvallis, OR, 27 February 2014. (75)

Jensen, A., S. Barker, and G. Zydlewski. Assessment of sea lice infestations on wild fishes of Cobscook Bay (poster). Maine Sea Grant Research Symposium, 3 April 2014. Orono, Maine. (88)

Jensen, A., M. Pietrak, S. Barker, G. Zydlewski, and I. Bricknell. Where are all the sea lice? Searching the wild fish of Cobscook Bay. Sea Lice 2014, 31 August-5 September 2014, Portland, ME. (200)

Johnson, T.R. 2014. Resilience in Maine fishing communities. Ocean Acidification Workshop, 7 October 2014. (50)

Johnson, T.R. 2014. Social resilience in small-scale fishing communities: an emphasis on perceptions and practice. Society for Human Ecology Conference, 24 October 2014, Bar Harbor, ME. (200)

Kaczor, K. Turbulence: healthy beaches, watersheds and tourist economies, University of Maine Sustainability Solutions Initiative Graduate and Faculty Seminar, 24 February 2014, Orono, ME. (40)

Kaczor, K. Strategies to identify sources of bacterial pollution impacting coastal beach water quality. US EPA National Sanitary Survey Webinar, 25 March 2014, Washington, DC. (140)

Kaczor, K. Clean water: working together to find solutions. Maine Water and Sustainability Conference, 1 April 2014, Augusta, ME. (60)

Kaczor, K. and M. Sims. The status of water quality in Goosefare Brook's New Salt Road tributary. Old Orchard Beach Inter-departmental Meeting, 28 April 2014, Old Orchard Beach, ME. (6)

Kaczor, K. What you can do to keep our coastal beaches healthy. Maine State Park Lifeguard Academy, 11 June 2014, Phippsburg, ME. (25)

Kaczor, K. Turbulence: healthy beaches, watersheds and tourist economies. The Lincoln Home, 7 July 2014, Damariscotta, ME. (16)

Kaczor, K. A world in a drop of seawater. Beachcombers' Rest Nature Center, 22 August 2014, South Bristol, ME. (10)

Kidder, G., P. Bushmann, and J. Disney. Restoration by seeding of *Z. marina* – a progress report (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Mansfield, M., D. Belknap, J. Kelley, and C. Loftin. The critical leading edge of Gulf of Maine salt marshes: interface with freshwater wetlands (poster). Maine Sea Grant Research Symposium, 3 April 2015, Orono, ME. (88)

Messerman, N., and T. Bowden. Prevalence of the protozoan parasite *Haplosporidium nelson* (MSX) in the eastern oyster, *Crassostrea virginica*, within the Damariscotta River Estuary (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Morse, D. Scallop aquaculture in Maine. Maine Fishermen's Forum, March 2014, Rockport, ME. (25)

Morse, D. Shellfish aquaculture. Maine Fishermen's Forum, March 2014, Rockport, ME. (50)

Morse, D. Oysters and Aquaculture. Great Salt Bay School, 28 October 2014, Walpole, ME. (50)

Morse, D., M. Brewer, B. Brewer, D. Brewer, T. Gray, M. Green, K. Kanwit, N. Perry, K. Scott, A. Sirois, P. Stocks, C. Vonderweidt, and E. Young. Sea scallop aquaculture in Maine: a 15-year overnight success. Delegation from Aomori Prefecture Japan, 14 November 2014, Portland, ME. (15)

Morse, D., M. Brewer, B. Brewer, D. Brewer, T. Gray, M. Green, K. Kanwit, A. Mays, E. Perry, N. Perry, K. Pfau, K. Scott, A. Sirois, P. Stocks, C. Vonderweidt, E. Young. Progress in the aquaculture of sea scallops (*Placopecten magellanicus*) in Maine. Northeast Aquaculture Conference and Expo, 16 January 2015. (60)

Morse, D. Aquaculture in Maine. Maine Harvest Festival, 9 November 2014, Bangor ME. (25)

Morse, D., P. Rawson, and M. Devin. Steady steps toward pilot production of razor clams (*Ensis directus*) and sea scallops (*Placopecten magellanicus*) in Maine and Massachusetts. National Shellfisheries Association, 31 March 2014, Jacksonville, FL. (45)

Morse, D., and S. Redmond. A pilot project to stimulate seaweed production on mussel farms in Maine. National Shellfisheries Association, 31 March 2014, Jacksonville, FL. (55)

Morse, D. The seafood industry is full of rock stars. Working Waterfront Summit, 21 October 2014, Violet, LA. (120)

Morse, D. Shellfish and seaweed aquaculture in Maine. JUICE Conference, 15 November 2014, Rockland, ME. (20)

Morse, D, S. Belle, and D. Devereaux. Aquaculture for commercial fishermen. Brunswick Shellfish Committee, 1 October 2014, Brunswick, ME. (35)

Morse, D. Oyster husbandry and equipment. Damariscotta River Association Oyster Gardening Program, 28 April 2014, Damariscotta, ME. (12)

- Morse, D. An overview of marine aquaculture in Maine. Unity Food Pantry, 15 April 2014, Unity, ME. (12)
- Morse, D., and M. Devin. Shellfish aquaculture on the Damariscotta River. Waynflete School, 11 July 2014, Walpole, ME. (20)
- Morse, D. Shellfish and seaweed aquaculture in Maine. Maine Department of Marine Resources, 20 August 2014, Yarmouth, ME. (15)
- Morse, D. Shellfish and seaweed aquaculture in Maine. Maine Department of Marine Resources, 27 August 2014, Newcastle, ME. (25)
- Oppenheim, N., and R.A. Wahle. A new forecasting model for the American lobster fishery using the American Lobster Settlement Index. 10th International Conference and Workshop on Lobsters, 18-23 May 2014, Cancún, Mexico. (200)
- Oppenheim, N.G., R.A. Wahle, and D.C. Brady. Can we forecast the future of the American lobster fishery from a larval settlement index? (poster). ASLO Ocean Sciences Meeting, 23-28 February 2014, Honolulu, HI. (5,000)
- Oppenheim, N.G., R.A. Wahle, and D.C. Brady. Can we forecast the future of the American lobster fishery from a larval settlement index? (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)
- Pershing, A.J., K.E. Mills, Y. Chen, A.C. Thomas, and R.A. Wahle. Impacts of the 2012 ocean heat wave on fish and fisheries (poster). ASLO Ocean Sciences Meeting, 23-28 February 2014, Honolulu, HI. (5,000)
- Pianka, K.E., T.R. Johnson, S.P. Hanes, and D. Morse. Diversifying working waterfronts through aquaculture: potential adoption of aquaculture by commercial fishermen. Maine EPSCoR State Conference, 1 December 2014, Orono, ME. (100)
- Pianka, K.E., T.R. Johnson, and S.P. Hanes. Waterfronts that work: potential adoption of aquaculture by commercial fishermen. Society for Human Ecology International Conference, 24 October 2014, Bar Harbor, ME. (20)
- Pianka, K.E., and T.R. Johnson. Aquaculture in Shared Waters. Maine Sea Grant Site Review, 7 October 2014, Orono, ME. (20)
- Pianka, K.E., T.R. Johnson, S.P. Hanes, and D. Morse. Assessing the feasibility of adding aquaculture to commercial fishing operations. University of Maine School of Marine Sciences Symposium, 12 May 2014, Walpole, ME. (50)
- Pietrak, M., C. Frederick, A. Jensen, S. Barker, G. Zydlewski, D. Brady, and I. Bricknell. Where are all the sea lice? Searching Cobscook Bay. Atlantic Canada Fish Farmers Association Meeting, 5-6 November 2014. (100)
- Rademaker, S. A handful of eels: sharing initial experiences and observations. Northeast Aquaculture Conference and Exposition, January 2014, Portland, ME. (50)
- Redmond, S. Seaweed farming for fishermen. Maine Fishermen's Forum, 1 March 2014, Rockland, ME. (40)
- Redmond, S., and P. Dobbins. Sustain-able: Maine's ocean products. Maine Academy of Nutrition and

Dietetics 2014 Spring Symposium, 15 May 2014, Portland, ME. (20)

Redmond, S. Introduction to the kelp farming technologies: open water farming. Northeast Aquaculture Conference and Expo, 15 January 2014, Portland, ME. (35)

Redmond, S., and M Pietrak. Seaweed, sea cucumber and shellfish cultivation in South Korea. International Aquaculture: A Virtual Visit to Japan, South Korea, and Spain, 19 February 2014, Belfast, ME. (10)

Redmond, S. Vegetables from the sea. Old Orchard Beach/Saco Adult and Community Education, 10 March 2014, Old Orchard Beach, ME. (5)

Redmond, S. Vegetables from the sea. Marshwood Adult Education, 11 March 2014, South Berwick, ME. (11)

Redmond, S., and H. Krapf. Maine seaweeds. Southern Maine Community College Marine Botany Class, 21 March 2014, South Portland, ME. (12)

Redmond, S., and C. Redmond. Cooking with sea vegetables. Lisbon Adult Education, 25 March 2014, Lisbon, ME. (5)

Redmond, S., S. Brawley, and S. Erhart. Growing towards the future: developing seeding technologies for sea vegetable culture in Maine (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Redmond, S. Kelp aquaculture in Maine. Downeast Lobsterman's Association Director's Meeting, 8 May 2014, Ellsworth, ME. (12)

Redmond, S., H. Krapf, and C. Redmond. Cooking with sea vegetables. Maine Organic Farmers and Gardeners Association Homestead Days, 14 June 2014, Unity, ME. (70)

Redmond, S. Maine's sea vegetables. Kennebunkport Conservation Trust, 23 October 2014, Kennebunkport, ME. (17)

Redmond, S. Integrating our expertise: kelp aquaculture for agriculture professionals. University of Maine Sea Grant and Cooperative Extension Field Trip and Meeting, 16 May 2014, Franklin, ME. (10)

Redmond, S. Maine sea vegetables in the kitchen. Frinklepod Farm Workshop, 9 August 2014, Arundel, ME. (6)

Redmond, S. The emerging seaweed aquaculture in Maine: the year in review. Seaweed Scene 2014, 30 August 2014, South Portland, ME. (131)

Redmond, S., and H. Krapf. The Maine ten, from bay to body. Maine Seaweed Festival 2014, 30 August 2014, South Portland, ME. (9)

Redmond, S. Seaweed aquaculture research and extension in Maine. Maine Seaweed Festival, 30 August 2014, South Portland, ME. (14)

Redmond, S. Maine seaweed aquaculture. University of New Hampshire Integrated Multi-trophic Aquaculture Class, 23 October 2014, Durham, NH. (8)

Redmond, S. Maine sea vegetables in the kitchen workshop. Sea Grant Marine Extension Team Retreat, 28 October 2014, Nobleboro, ME. (12)

Redmond, S. Our ocean treasure: exploring seaweeds of Maine and New Hampshire. University of New Hampshire/Stages at One Washington, 5 January 2014, Dover, NH. (30)

Redmond, S. Our ocean garden: sea vegetables of Maine. Schoodic Education and Research Center, 30 January 2015, Winter Harbor, ME. (20)

Runnebaum, J., and T. Johnson. Potential impacts of listing cusk (*Brosme brosme*) as a federally protected species on state managed fisheries: What happens when no one is in charge? 29th Lowell Wakefield Fisheries Symposium (Alaska Sea Grant), Fisheries Bycatch Global Issues and Creative Solutions, 13 May 2014, Anchorage, AK. (100)

Runnebaum, J., Y. Chen, K. Reardon, and C. Wilson. Survivability of recompressed barotraumatized cusk bycatch in the Maine lobster fishery (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Runnebaum, J., K. Reardon, Y. Chen, and C. Wilson. 2014. Assessing barotrauma treatments of cusk (*Brosme brosme*) bycaught in the Maine Lobster Fishery. American Fisheries Society Annual Meeting, 19 August 2014, Quebec City, Quebec. (20)

Salisbury, J., T. Capson, R. Morrison, D. Gledhill, B. Mook, E. Turner, E. Stancioff, M. Cote, H. Thomas, and S. DeGuise. The Northeast Coastal Acidification Network (NE-CAN): meeting stakeholder needs for ocean acidification information (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Schmitt, C. Science is people, then and now. Acadia Science Symposium, 16 April 2014, Winter Harbor, ME. (100)

Schmitt, C. Science in Acadia National Park: early history and its role in conservation, Road Scholars, 30 May 2014, Bar Harbor, ME. (25)

Schmitt, C. Science in Acadia National Park: early history and its role in conservation, Road Scholars, 4 June 2014, Bar Harbor, ME. (25)

Schmitt, C., and S. Redmond. Seafood seasons in Maine. Maine Fare Festival, 20 June 2014, Belfast, ME. (15)

Schmitt, C. Science in Acadia National Park: early history and its role in conservation, College of the Atlantic Coffee & Conversation, 1 July 2014, Bar Harbor, ME. (20)

Schmitt, C. Science in Acadia National Park: early history and its role in conservation, Road Scholars, 5 September 2014, Bar Harbor, ME. (25)

Schmitt, C. Science in Acadia National Park: early history and its role in conservation, Road Scholars, 17 October 2014, Bar Harbor, ME. (25)

Schmitt, C. Scientific communication vs. science communication. Dr. Yong Chen Laboratory, 5 December 2014, Orono, ME. (20)

Showalter Otts, S., K. Grant, and N. Springuel. The Sustainable Working Waterfronts Toolkit: Connecting decision-makers, landowners, and users with information and tools for preserving and enhancing our nation's working waterfronts. NOAA Central Library Brown Bag Series and Webinar, March 2014, Silver Spring, MD. (50)

Showalter Otts, S., K. Grant, and N. Springuel. The Working Waterfront Toolkit. Economic Development Administration (webinar), 4 March 2014. (75)

Sims, M., and K. Kaczor. Maine healthy beaches at a glance. York County Community College, 10 September 2014, Wells, ME. (25)

Sims, M., and K. Kaczor. Goosefare Brook Water Quality, Stream Monitoring and Assessment Committee, 24 June 2014, Saco, ME. (15)

Sirois, A., and B. Spaulding. Monitoring *Alexandrium fundyense* using fluorescent *in-situ* hybridization and an imaging flow cytometer (FlowCAM®) for early detection of toxic bloom events in Harpswell, Maine. International Conference on Harmful Algae, 27-31 October 2014, Wellington, New Zealand. (500)

Springuel, N., C. Petersen, C. Guenther, T. Johnson, B. McGreavy, and A. Hayden. Community fisheries in Downeast Maine: an evolving model for future resilience. Society for Human Ecology, 22-25 October 2014, Bar Harbor, ME. (75)

Springuel, N., D. Morse, S. Apollonio, C. Guenther, and C. Wilson. Coastal Maine and the living sea. Maine and the Mortal Sea, 26 April 2014, Walpole, ME. (80)

Springuel, N. Fisheries heritage and the role of tourism in Downeast Maine communities (panel). Maine Humanities Summit, 16 May 2014, Augusta, ME. (55)

Springuel, N. Downeast Fisheries Trail. Two Nation Vacation Industry Advisory Meeting, 17-18 February 2014, St. Andrews, New Brunswick, Canada. (18)

Springuel, N. Downeast Fisheries Trail. Two Nation Vacation Industry Advisory Meeting, 6 May 2014, Calais, ME. (32)

Springuel, N. Downeast Maine fisheries and working waterfronts, an overview. Acadia Conservation Intern Program, 28 July 2014, Winter Harbor, ME. (26)

Springuel, N. Coastal recreational access, problems and solutions. National Association of State Boating Law Administrators, 17 October 2014, Bar Harbor, ME. (20)

Springuel, N. Working waterfronts, policy framework and action (panel). The Coastal Society / Restore America's Estuaries, 2-5 November 2014, Washington, DC. (15)

Springuel, N. The Downeast Fisheries Trail. Pembroke Historical Society, 29 September 2014, Pembroke, ME. (18)

Springuel, N. Natural history lectures, A Prairie Home Companion Cruise to the North and Baltic Seas, August 2014. (500)

Stancioff, E., A. Baker, S. Belknap, R. Goble, K. Grant, S. Hoyt, Y. Sun, S. Tuler, T. Webler, and J. Whitehead. Planning for a changing climate: a participatory approach to fishing community adaptation. Social Coast Forum, 19 February 2014, Charleston, SC. (25)

Stancioff, E., A. Baker, S. Belknap, R. Goble, K. Grant, S. Hoyt, Y. Sun, S. Tuler, T. Webler, and J. Whitehead. Planning for a changing climate: a participatory approach to fishing community adaptation. (poster) Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Stancioff, E., Community Engagement: Marine Extension Team and NECAN. Maine OA Commission Forum, Walpole, ME, 1 August 2014. (25)

Stancioff, E., Jain, S., Gagnon, M., Working together to help coastal communities plan for resilient futures: Climate change adaptation research and outreach in Ellsworth, Maine. Maine Sea Grant Research Symposium, Orono, ME, 3 April 2014. (88)

Stancioff, E., S. Jain, A. Gray, N. Dhakal, and M. Dandy. Coastal infrastructure resiliency in a changing climate (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, Maine. (88)

Stancioff, E., Regional Capacity: Northeast Sea Grant Program. State of the Science, NECAN OA workshop, Durham, NH, 11 April 2014. (50)

Stancioff, E., Gray, A., Jain, S., Gagnon, M. Ellsworth Community Forum: Adapting to Extreme Storms. Ellsworth, ME, 7 April 2014. (63)

Stancioff, E. How are things changing in Maine? ENCORPS Summit Annual Forum, 21 May 2014, Phippsburg, ME. (35)

Stancioff, E., and S. Norton. Intersection of climate change and art. Climate and Earth Art and Environmental Science Collaborations Symposium, 30 September 2014, Winter Harbor, ME. (29)

Stancioff, E. Climate change adaptation in coastal communities. Acadia Science Symposium, 1 October 2014, Winter Harbor, ME. (65)

Stancioff, E. Assessing, monitoring and implementing change at your scale of interest. CLAS Conference: Building a Framework and Platform for Climate Adaptation and Sustainability Planning for Maine Communities, 23 October 2014, Orono, ME. (160)

Stancioff, E. How are things changing in Maine's coastal waters? Maine Community Food Summit, 11 November 2014, Hallowell, ME. (37)

Stancioff, E. Community outreach: Marine Extension Team and Northeast Coastal Acidification Network. Maine NECAN Stakeholder Workshop on Ocean Acidification, 10 December 2014, Walpole, ME. (50)

Stancioff, E., C. Stymiest, T. Capson, B. Mook, R. Morrison, J. Salisbury, M. Liebman, E. Turner, and M. Cote. Working with stakeholders in the region of the Northeast Coastal Acidification Network. Northeast Aquaculture Conference and Exposition, 16 January 2015, Portland, ME. (50)

Staples, K.W., Y. Chen, and D.W. Townsend. Climate change and lobster in the Gulf of Maine: Investigation of the temporal impact on molting. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Suldovsky, B., L. Lindenfeld, and T. Johnson. The Seafood Links Project: promoting sustainable seafood in Maine's inland areas (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Tanaka, K., S.L. Belknap, and J.J. Homola. Shell disease in American lobster: identification of infection-promoting environmental factors and projects for an expanding epizootic (poster). American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Tanaka, K., and Y. Chen. American lobster under changing climate: An evaluation of temporal and spatial variability in lobster suitable habitat. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Truesdell, S., D. Hart, and Y.Chen. Yield per recruit analysis under spatial heterogeneity in growth and fishing effort (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Truesdell, S., D. Hart, and Y.Chen. Yield per recruit analysis under spatial heterogeneity in growth and fishing effort. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Viehman, H., G. Zydlewski, and J. McCleave. Assessing effects of tidal turbines on fishes (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Viehman, H.A., and G.B. Zydlewski. Optimizing sampling based on temporal variation in fish abundance at a tidal energy site in Cobscook Bay, Maine. American Fisheries Society Annual Meeting, 20 August 2014, Quebec City, Quebec. (20)

Viehman, H.A. Do tidal turbines affect fish? (poster). International Network for Offshore Renewable Energy, 1 November 2014, Halifax, Nova Scotia. (50)

Viehman, H.A., and G.B. Zydlewski. A unique approach to developing alternative energy from the ocean. Hirosaki University, 7 January 2015, Hirosaki, Aomori, Japan. (30)

Vieser, J., G. Zydlewski, T. Johnson, and J. McCleave. Collaborative research on finfish in Cobscook Bay, Maine (poster). Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME. (88)

Wahle, R.A., and P. Jekielek. The American Lobster Settlement Index: a US-Canada collaborative for ecological and fishery monitoring (poster). ASLO Ocean Sciences Meeting, 23-28 February 2014, Honolulu, HI. (5,000+)

Wahle, R.A. The American lobster: poster child of a changing ecosystem. 10th International Conference and Workshop on Lobsters, 18-23 May 2014, Cancún, Mexico. (200)

Wahle, R.A., L. Delinger, S. Olszewski, P. Jekielek, and C. Bergeron. Lobster nurseries of southern New England recede in the face of climate change. 10th International Conference and Workshop on Lobsters, 18-23 May 2014, Cancún, Mexico. (200)

Wahle, R.A. The American lobster in a changing ecosystem. Maine Legislators visit to the Darling Marine Center, 5 June 2014, Orono, ME. (20)

Wahle, R.A. The American lobster in a changing ecosystem. The Lobster Institute Board of Advisors, 11 June 2014. Orono, ME. (30)

Wahle, R.A. Ocean acidification and the challenges facing the American lobster fishery in a changing ecosystem. Ocean Acidification Commission, 5 August 2014, Walpole, ME. (50)

Wahle, R.A., and N. Oppenheim. Applied research in focus: Long-term investment in the American lobster settlement index. Sea Grant Site Review, 7 October 2014, Orono, ME. (30)

Wahle, R.A., W. Ambrose, and R. Kilada. The American lobster: Developing forecasting tools in a changing ecosystem. Workshop on Crustacean age determination, 11 November 2014, Tromsø, Norway. (30)

Wahle, R.A., and N. Oppenheim. Developing forecasting tools from a larval settlement index. Workshop on Fishery Forecasting and Prediction, 18 December 2014, South Portland, ME. (150)

Wahle, R.A. The American lobster in a changing ecosystem. Maine Legislators Bus Tour, 14 January 2015, Orono, ME. (40)

Webber, H., A. Powers, J. Colangelo, E. Stancioff, B. Bisson, and J. Muhlin. Citizen scientists in the rockweed: a monitoring program for intertidal phenology (poster). Acadia National Park Science Symposium, 1 October 2014, Schoodic Institute, Winter Harbor, Maine. (125)

Whitefleet-Smith, L.A., C.E. Tilburg, and A.L. Bass. Species identification of hake in Maine markets (poster). New England Estuarine Research Society, 1-3 May 2014, Salem, MA.

Whitefleet-Smith, L.A., A.L. Bass, and C.E. Tilburg. Species identification of hake fishes of the gulf of Maine (poster). UNE Family and Friends Weekend.

Whitefleet-Smith, L.A., A.L. Bass, and C.E. Tilburg. Species identification of hake fishes of the Gulf of Maine (poster). UNE Board of Trustees' Annual Meeting hosted by the Marine Science Center.

Whitefleet-Smith, L.A., A.L. Bass, and C.E. Tilburg. 2013. Species identification of hake fishes of the gulf of Maine (poster). Regional Association for Research on the Gulf of Maine, Portland, Maine.

Zhang, C., and Y. Chen. Development of a standardized CPUE for Atlantic cod and cusk using bycatch data in the coastal Gulf of Maine lobster fishery. American Fisheries Society Annual Meeting, 18 August 2014, Québec City, Quebec. (30)

Zydlewski, G.B. Energy and the environment: a marine perspective. Hirosaki University, 8 January 2015, Hirosaki, Aomori, Japan. (20)

Zydlewski, G.B. Energy and the environment: a marine perspective. Hirosaki University, 6 January 2015, Hirosaki, Aomori, Japan. (100)

Zydlewski, G.B. Capturing the tides: a sustainable approach to renewable energy. Hirosaki University, 13 January 2015, Hirosaki, Aomori, Japan. (100)

Zydlewski, G.B. Capturing the tides: a sustainable approach to renewable energy. Hirosaki University, 15 January 2015, Hirosaki, Aomori, Japan. (20)

Viehman, H.A., and G.B. Zydlewski. 2015. A unique approach to developing alternative energy from the ocean. Hokkaido University, 12 January 2015, Sapporo, Hokkaido, Japan. (10)

Meetings, conferences, events organized, facilitated, or sponsored by Sea Grant

Maine Healthy Beaches

37 field trainings, May-July 2014. (235)

13 water quality study meetings. (54)

6 regional beach manager meetings, April –May 2014. (37) 6 interagency collaborations. (26)

3 other meetings (15)

1 laboratory training, 7 May 2014, Bar Harbor, ME. (8)

6 Maine Aquaventis meetings, Monhegan and Bristol, ME. (184)

4 Creative No/Articulate Yes: Skills for the Sea Grant Network, Georgia, New York, Washington DC, Florida. (75)

9 Signs of the Seasons trainings, March-August 2014 (93)

5 Maine Beaches Conference Steering Committee meetings, September-January. (48)

3 Maine Marine Invasive Species Collaborative Meetings, September 2014-January 2015, Portland, ME. (15)

Island Housing Trust strategic planning retreat, 25 January 2014. (16)

Best Management Practices for Aquaculturists, 27 January 2014. (18)

Assessing the linkage between bacteria and rainfall on Gooch's Beach, Kennebunk Conservation Commission, 5 February 2014, Kennebunk, ME. (5)

Maine Water and Sustainability Conference Beaches and Shellfish Beds Session, 6 February 2014, Orono, ME. (7)

Maine coastal beach water quality: challenges and successes, National Resources Defense Council, 7 February 2014, Waldoboro, ME. (2)

Maine Fishermen's Forum, March 2014, Rockport, ME. (3,000)

Maine Sea Grant Research Symposium, 3 April 2014, Orono, ME (88)

Maine Water and Sustainability Conference Beaches and Shellfish Beds Session, 14 March 2014, Waldoboro, ME. (5)

American Lobster Settlement Index Annual Meeting, 2 April 2014, Portland, ME. (30)

Ellsworth Community Forum: Adapting to Extreme Storms, 7 April 2014, Ellsworth, ME. (63)

Northeast Coastal Acidification Network State of the Science workshop, 10-11 April 2014, Durham, NH. (60)

Maine and the Mortal Sea: Taking Stock of the Past, Present and Future of Our Living Seas, 26 April 2014, Walpole, ME. (80)

Aquaculture on the Bagaduce River, 30 April 2014, Brooksville ME. (200+)

US/Canada Scallop Science Summit, 6-8 May 2014, St. Andrews, NB. (44)

CCAP/CAW bi-state climate networks meeting, 9 June 2014. (35)

The Sea Grant Network Responds to Tourism Opportunities in Fishing and Aquaculture, Fisheries Extension Network Webinar, 10 June 2014. (50)

The Future of the Ralph Stanley Boatyard, A Community Conversation, 12 June 2014, Southwest Harbor, ME. (29)

Building Blueberry Cove's Science Curriculum, 27 June 2014, Waldoboro, ME. (2)

The Future of the Ralph Stanley Boatyard, A Community Conversation, 30 June 2014, Somesville, ME. (6)

Aquaculture on the Bagaduce River, 31 July 2014, Brooksville, ME. (75)

Commission to Study the Effects of Coastal and Ocean Acidification on Commercially Harvested and Grown Species, 1 August 2014, Walpole, ME. (50)

Schoodic Peninsula Community Conversation about New Acadia National Park Campground, 28 August 2014, Winter Harbor, ME. (200)

Maine Seaweed Festival, 30 August 2014, South Portland, ME. (150)

York and Stratham Charrette Planning Committee, October 2014. (99)

Northern Maine Children's Water Festival, 10 October 2014, Orono, ME. (700)

York Charrette, 15-17 October 2014, York, ME. (94)

Maine Department of Marine Resources Rockweed Working Group, 15 October 2014, Hallowell, ME. (25)

Stonington Working Waterfront Adaptation Committee, 21 October 2014, Stonington, ME. (25)

Stratham Charrette, 22-24 October 2014, Stratham, NH. (97)

Invited Workshop on Sustainable Fisheries and Ecological Aquaculture of Eels in the Northeastern USA, 16-17 October 2014, Biddeford, ME. (25)

CLAS Conference: Building a Framework and Platform for Climate Adaptation and Sustainability (CLAS) Planning for Maine Communities, 23 October 2014, Orono, ME. (200)

Shellfish Upweller Tour, 25 October 2014, Freeport, ME. (7)

SEANET (Sustainable Ecological Aquaculture Network) strategic planning session, 12-13 November 2014, Orono, ME. (25)

Aquaculture of Steelhead Trout, 18 November 2014. Portsmouth, NH. (5)

Maine Department of Marine Resources Rockweed Working Group, 17 November 2014, Machias, ME. (70)

Maine Northeast Coastal Acidification Network Stakeholder Workshop Ocean Acidification, 10 December 2014, Walpole, ME. (40)

Maine Department of Marine Resources Rockweed Working Group, 18 December 2014, Bangor, ME. (30)

Maine Department of Marine Resources Rockweed Working Group, 13 January 2015, Brewer, ME. (35)

East Coast Molluscan Health Workshop, 13-14 January 2015, Portland, ME. (50)

Northeast Aquaculture Conference and Expo, 16-18 January 2015, Portland, ME. (400)

Workforce Housing Coalition member appreciation event. (41)

Workforce Housing Coalition Annual celebration. (73)

National Working Waterfront Network Outreach and Education Committee. (63)

Economic Impact Assessment Downscale Guide (with NOAA). (60)

International Conference on Shellfish Restoration. (200)