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This report contains information regarding Maine Sea Grant’s performance during the period February 1, 2016 through January 31, 2017.

MAJOR ACCOMPLISHMENTS

Members of the Sea Grant-Cooperative Extension Marine Extension Team continued their commitment to excellence in serving the people of Maine in 2016. Here are some selected highlights from their work:

- Since Sea Grant helped initiate Aquaculture in Shared Waters in 2013, more than 60 fishermen from communities across the coast have received training in aquaculture products, processes, and business operations. To date, 13 have secured leases and a total of 30 are now involved in aquaculture to some degree.

- Working with the Workforce Housing Coalition of the Greater Seacoast, the Town of Berwick, and community members, Kristen Grant led a planning process that has provided the town with resource people, new ideas, and a vision for redevelopment, which led to a record $600,000 EPA Brownfields grant.

- More than 40 constituents, including Maine DEP and municipalities, used data from the Healthy Beaches Program, coordinated by Keri Kaczor, to manage beaches, prioritize upgrades to sewer and stormwater infrastructure, establish setback requirements, procure grant and bond funding, and launch public education campaigns. Pollution source identification, analysis, and remediation activities resulted in documented water quality improvements in Camden, Old Orchard Beach, York, and Kittery.

- Sea Grant investment in sea scallop management and research has resulted in 15 scallop farms involved in product development and stock enhancement, including experimentation with “ear-hanging,” a new approach to cultivation that results in high yield and faster growth. Trials are underway in the experimental lease site at the Darling Marine Center.

- Esperanza Stancioff co-founded the Northeast Coastal Acidification Network (NECAN) for the synthesis and dissemination of regional ocean acidification data and information. NECAN is assisting states in the Northeast, including Maine’s Ocean and Coastal Acidification Partnership and wild harvest and aquaculture shellfish industry members. NECAN has also provided a model for three other regional coastal acidification networks.

The majority of Sea Grant funds support research and program development projects with direct application to coastal and marine resource issues in Maine. Here are a few highlights from 2016:

- The American Lobster Settlement Index, hosted by UMaine researcher Rick Wahle, is a key annual indicator of present conditions and possible future landings, used by state and federal agencies and fishermen to understand the lobster population in space and time. With recent data suggesting a continued decline in the number of juvenile lobsters settling to traditional bottom habitat, Wahle is looking for juveniles in deeper water. Sea Grant funds supported graduate student Jesica Waller’s research on juvenile survival under temperature increases, published in *ICES Journal of Marine Science*.
UMaine researcher Hamish Greig’s study of salmon, native brook trout, and invasive smallmouth bass in freshwater habitat under changing climate scenarios has created an outreach opportunity for Greig and his students to make connections between healthy stream wildlife and water quality for the public as well as those concerned with fisheries. The Sea Grant project, still in its first year, has helped Greig become an integral participant in statewide networks and projects related to salmon ecosystems and riparian management.

Alice Kelley has successfully applied a rapid, non-invasive technique to evaluate coastal shell middens, unique resources that hold a record of human occupation and coastal adaptation but are disappearing under rising seas. By request, she is assisting the National Park Service in assessing vulnerable properties.

Sea Grant facilitated the formation of the Alliance for Maine’s Marine Economy, a multi-institutional public-private partnership that is overseeing the expenditure of $18M in infrastructure investment in the seafood industry.

UMaine researcher Yong Chen and postdoctoral research associate Jie Cao developed a new model to better capture shrimp’s complex life history, the seasonal nature of fishing, and environmental conditions. The model was tested in 2016 and is set to be adopted by the ASMFC in 2017.

Two program development grants to American Unagi LLC have helped business owner Sara Rademaker advance U.S. based culture of adult American eels and earn $49,400 from USDA’s Value-Added Producer Grant.

Sea Grant supported the International Network on Offshore Renewable Energy symposium at UMaine and presented a workshop illustrating how connecting people from different backgrounds and fields of expertise can enhance the success of coastal initiatives, raising awareness among the engineering community of how much social and environmental groundwork is needed in advance when introducing a new technology to coastal waters.
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. A National Sea Grant Performance Review Panel found Maine to be meeting or exceeding the standards of a Sea Grant College.

MISSION

Maine Sea Grant’s mission is to support the responsible use and conservation of coastal resources in order to sustain thriving coastal communities and ecosystems.

VISION

Our vision, from our current strategic plan, is a Maine where thriving coastal communities and ecosystems are supported by an engaged public and informed decision-makers.

STATUS OF STRATEGIC PLAN

Maine Sea Grant began its 2018-2021 strategic planning process in November 2015 and completed it in October. The final plan, approved in April 2017 by the National Sea Grant Office and in alignment with the national NOAA Sea Grant plan, reflects our intent to advance our efforts 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 near future.

ADMINISTRATION AND STAFFING STRUCTURE

See Appendix E for Policy Advisory Committee.
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. Nine professionals are based in coastal communities from Wells to Eastport. The Marine Extension Team connects scientific researchers, information resources, and coastal stakeholders. The specific communities and partner organizations engaged in Sea Grant programming vary from year to year, but typically number in the hundreds. See Appendix A. In addition, Maine Sea Grant produced 58 print and digital outreach publications, including fact sheets, websites, interpretive panels, radio programs, podcasts, videos, and articles, all intended for non-scientific audiences and based on community information needs.

ECONOMIC DEVELOPMENT

<table>
<thead>
<tr>
<th>Economic impact</th>
<th>Businesses created</th>
<th>Businesses retained</th>
<th>Jobs created</th>
<th>Jobs retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>$33,976,160</td>
<td>5</td>
<td>33</td>
<td>2</td>
<td>31</td>
</tr>
</tbody>
</table>

Sea Grant’s total economic impact for 2016 includes

- $18M in bonds and grants resulting from our leadership in the Alliance for Maine’s Marine Economy;
- $11.2M in bonds and grants to support clean water infrastructure procured with assistance from the Maine Healthy Beaches Program; and
- $3.7M for the Maine Aquaventis offshore wind project; Sea Grant assisted in research and outreach.

WORKFORCE DEVELOPMENT

Maine Sea Grant’s workforce development opportunities include student fellowships and scholarships; funding criteria that favor meaningful involvement of K-16 and graduate students in research; and professional training for both students and adult professionals through involvement in Sea Grant extension, education, and communications programs. Training subjects include outreach skills such as facilitation, science communication, and community engagement, aquaculture methods, and business planning.

Opportunities for undergraduate and graduate students 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, master’s degree program in marine policy and science. The annual Maine Sea Grant Undergraduate Scholarship in Marine Sciences serves students from five public and private undergraduate institutions in Maine that 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 for 2016 recipients). In addition, Sea Grant informal education and citizen science programs involve stakeholders of all ages in research and stewardship, and

K Tenga-González
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 2016, we were honored to have a Maine applicant selected for the National Sea Grant John D. Knauss Fellowship in Marine Policy, Class of 2017. Emily Chandler, (’16 UMaine, M.S. in Earth and Climate Sciences), began her Knauss Fellowship position with the Office of the Oceanographer of the Navy in February 2017.

See Appendix D for a full list of Sea Grant-supported students in 2016.

COLLABORATIONS WITH UMAINE SYSTEM CAMPUSES

- University of Southern Maine (4)
  - Research funding to K. Wilson, “Variation in habitat use by juvenile river herring in the Penobscot River.”
  - Program development funding for Maine Coastal Observing Alliance
  - Extension involvement in Maine Marine Invasive Species Collaborative
  - Undergraduate Scholarship in Marine Science

- University of Maine at Machias (9)
  - Research funding to B. Beal, “Arctic surf clam: A new candidate species to diversify and advance sustainable domestic aquaculture in Maine and the Northeast U.S.”
  - Program development funding to J. Nettleton for a kelp nursery system
  - Program development funding for temperature logger network
  - Beal and Nettleton are members of the NSF EPSCoR SEANET Bioregion 3 Team
  - Machias Bay Initiative
  - Research Reinvestment Fund grant to R. Wahle for lobster collector work
  - Participation in Signs of the Seasons Phenology Program
  - Undergraduate Scholarship in Marine Science
  - MET representation on DEI board

COLLABORATIONS WITH OTHER OUTSIDE INSTITUTES/ORGANIZATIONS

A list of partners from 2016 is attached in Appendix A.
<table>
<thead>
<tr>
<th>Financial Sustainability</th>
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</thead>
<tbody>
<tr>
<td><strong>E&amp;G Support</strong></td>
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<tr>
<td>n/a</td>
</tr>
<tr>
<td><strong>MEIF Support</strong></td>
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<tr>
<td>$777,795 (includes fringe benefits and indirect)</td>
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<tr>
<td><strong>Research Awards</strong></td>
</tr>
<tr>
<td>$25,378 NOAA Penobscot Habitat Blueprint</td>
</tr>
<tr>
<td>$46,859 NSF EPSCoR SEANET (Sea Grant portion)</td>
</tr>
<tr>
<td>Funding during 2016 was omnibus year three, including Maine Sea Grant administration, communications, extension, and climate change-related projects. Re: Press Coverage - See Appendix B.</td>
</tr>
<tr>
<td><strong>External Awards Received / University Funding</strong></td>
</tr>
<tr>
<td><strong>Return on Investment</strong></td>
</tr>
<tr>
<td>$1,891,683 Total Awards</td>
</tr>
<tr>
<td>$1,028,678 NOAA Base/Core/CCD Funding</td>
</tr>
<tr>
<td>$153,088 NOAA Merit Funding</td>
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<tr>
<td>$30,000 NOAA Climate Adaptation</td>
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<tr>
<td>$19,786 NOAA Resiliency Funding (Signs of the Seasons)</td>
</tr>
<tr>
<td><strong>Research and Outreach Leveraged with NOAA SG Funds (Awarded)</strong></td>
</tr>
<tr>
<td>$25,378 NOAA Penobscot Habitat Blueprint</td>
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<tr>
<td>$75,023 Broad Reach Fund - Aquaculture Extension Capacity</td>
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<tr>
<td>$56,600 NOAA Knauss Fellowship - Emily Chandler</td>
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<tr>
<td>$200,000 NOAA Larval Lobsters and Ocean Acidification</td>
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<tr>
<td>$18,692 NOAA Oyster Trail of Maine</td>
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<tr>
<td>$277,435 NOAA New Species for Aquaculture in Maine</td>
</tr>
<tr>
<td>$7,000: town contributions for Beach Profile Monitoring Program</td>
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<tr>
<td><strong>Submitted-funded</strong></td>
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<tr>
<td>$19,786 Signs of the Seasons: Resilience NSI funding</td>
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<tr>
<td>$25,378 NOAA Penobscot Habitat Blueprint</td>
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<tr>
<td>$75,023 Broad Reach Fund - Aquaculture Extension Capacity</td>
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</tr>
<tr>
<td>$277,435 NOAA New Species for Aquaculture in Maine</td>
</tr>
<tr>
<td><strong>Submitted-not funded</strong></td>
</tr>
<tr>
<td>Aquaculture Production and Security: Developing a Safe, Reliable Seed Catalog for the Sea Vegetable Farming Industry</td>
</tr>
<tr>
<td>Technical Assistance to Small and Emerging Fisheries and Aquaculture Business in Maine’s Downeast Coastal Counties</td>
</tr>
<tr>
<td>Community Monitoring of Sandy Beach Profiles from Maine to Micronesia</td>
</tr>
<tr>
<td>Fiscal Year 2017 National Sea Grant College Program Dean John A. Knauss Marine Policy Fellowships (Johnston, Watson)</td>
</tr>
</tbody>
</table>
REVENUE CENTERS

n/a

PRIVATE GIVING/ALUMNI CULTIVATION

n/a

INITIATIVES TO INCREASE FISCAL EFFICIENCY

Maine Sea Grant’s funding includes federal and non-federal funds, thus financial management processes are governed by both federal and UMaine rules; these are largely the same, with occasional and subtle differences. Fiscal management is coordinated by a full-time Fiscal Officer (Lynn Wardwell) who is highly skilled with the management of complex federal grants, and is considered an expert at UMaine on the NOAA-related portfolio. Maine Sea Grant expects all program delivery staff (Extension/Education) to attract two months of salary support from external sources through partnerships and sponsored research awards. This practice is largely successful across the Marine Extension and Communications Teams, thereby allowing for fiscal solvency.
CULTURE OF EXCELLENCE

FACULTY AND STAFF ACHIEVEMENTS

- Sea Grant Association Research to Application Award: P. Anderson, S. Redmond, D. Morse, S. Brawley, and N. Brown
- Workforce Housing Coalition Visionary Award: K. Grant
- National Sea Grant Extension Assembly Superior Outreach Programming Award: S. Redmond
- Acadia Road Scholars, highest-ranked Road Scholar provider in the world in 2016: C. Schmitt
- ICES Working Group on Data-Poor Diadromous Fishes: K. Wilson, co-chair

RESEARCH AND SCHOLARSHIP SUMMARY

See Appendix C for complete listing

In 2016, Maine Sea Grant staff and researchers created

- 16 peer-reviewed publications, 1 journal special issue, and 1 book chapter;
- 1 book (Historic Acadia National Park by Catherine Schmitt);
- 15 technical reports/proceedings;
- 58 print and digital outreach publications, including fact sheets, websites, interpretive panels, radio programs/podcasts, videos, and articles;
- 169 presentations to professional and public audiences, attended by approximately 20,000 people; and
- 207 Sea-Grant sponsored or organized workshops, meetings, and conferences attended by approximately 200,000 people.

CURRICULAR INNOVATIONS/INTEGRATION WITH THE UMAINE EDUCATION MISSION PROGRAM

- Catherine Schmitt taught ENG 212, Persuasive and Analytical Writing, in Spring 2016. Schmitt’s book, The President’s Salmon, was used as a text in SMS Fisheries Management History; Historic Acadia National Park was used in EES 489. Schmitt presented seminars on campus about communicating science.
- Damian Brady, assistant professor in the School of Marine Sciences, taught SMS 484, Estuarine Oceanography, in 2016.
- Beth Bisson is a member of the UMaine K-12 Outreach Network.
STUDENT ENGAGEMENT, STUDENT SUCCESS

See Appendix D for details.

UNDERGRADUATE STUDENT RESEARCH, SCHOLARSHIP OR CREATIVE ACTIVITIES

Maine Sea Grant supported a total of 48 undergraduate students, 13 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

n/a

GRADUATE STUDENT RESEARCH, SCHOLARSHIP OR CREATIVE ACTIVITIES

Maine Sea Grant supported a total of 29 graduate students, 23 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

Ji Cao, Graduate Research Award from UMaine College of Natural Sciences, Forestry, and Agriculture
Catherine Frederick, Graduate Student Conference Scholarship Award (NACE 2017), Catherine Frederick, International Scholarship Award Sea Lice International Conference (Fall 2016)
Nicole Ramberg-Phil, Olin Fellowship from Atlantic Salmon Federation
Charlotte Royer, NSF EAPSI Fellowship
Jessica Waller, 2016 Edith Patch Award
Dongmei Xie, Chase Distinguished Research Assistantship
Dongmei Xie, Michael J. Eckardt Dissertation Fellowship Award

RETENTION AND GRADUATION NUMBERS, INITIATIVES

n/a

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 2016, 10 UMS students (5 undergraduate and 5 graduate) received degrees, and 5 Sea Grant-supported undergraduates from other institutions received degrees.

HIGHLIGHTED STUDENT PROFILE

Nicole Rahmberg-Pihl is a doctoral student in Ecology and Environmental Science (EES), working with Hamish Grieg, Stephen Coglan, and Joseph Zydlewski on their Sea Grant-supported research project. Ramberg-Phil and her undergraduate research assistants spent the summer of 2016 preparing experimental tanks in the UMaine Aquaculture Research Center to resemble artificial stream environments with different water temperatures and velocities, and then installed a camera system to record how Atlantic salmon respond to different conditions when in the presence of competitors such as smallmouth bass. She and the team are currently integrating these lab experiments with modeling and field validation, and have begun connecting with forest managers, private landowners, and forestry companies to share information and discuss research needs for Maine’s forested ecosystems. Ramberg-Pihl’s master’s research at Plymouth State University looked at the influence of predatory smallmouth bass on the distribution of crayfish in New Hampshire lakes, and her current research has allowed her to broaden her focus on ecology and animal behavior, to include climate-related influences on species interactions.
The most significant challenge faced in the coming year is the Trump Administration’s proposed elimination of the National Sea Grant College Program from the federal budget beginning with Fiscal Year 2018. Advocacy efforts, led by the Sea Grant Association, successfully restored funding for FY2017 (through January 2018) and those efforts continue in hopes that the Congress will restore Sea Grant in the 2018 federal budget.

Maine Sea Grant continues to be over-subscribed. Sea Grant staff are seen as desirable partners with a reputation for getting things done. 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 among our partners. This pressure on fiscal resources results in a more focused approach to programming and to be as strategic as possible in selecting partnerships and programs to support. Part of the solution to this challenge is to look to grantsmanship and external funding sources and to maximize the leveraging our own resources and time to secure those funds. In 2016, the program was successful in leveraging new resources in several areas, such as applied research and professional training in aquaculture in general, and seaweed aquaculture more specifically. However, there are other areas such as climate change adaptation planning, science information content, and requests for outreach to and support for K-12 audiences, in which the demand for our time continues to far outstrip our current staff capacity and available federal funding opportunities. Uncertainty in the federal budget and the unwillingness of government leadership to confront the challenges of climate change exacerbate this problem.

Finally, the program will also undergo a change in leadership with the departure of Director Paul Anderson in August 2017. A search for a new Director is in progress and an interim strategy is in place. The new Director inherits a strong Sea Grant program and an excellent Marine Extension Team. University leadership should re-emphasize the importance of the Sea Grant program, recognize the workload associated with managing the program well, and allow for the new director to prioritize time on Sea Grant rather than being spread across other units of the University of Maine. The organizational structure of the Management Team may also shift depending on the new Director’s skill set, particularly with respect to managing the research element.
SUMMARY OF NEW INITIATIVES

The program will be involved in a National Network Visioning effort with other Sea Grant programs, coordinated and funded by the National Sea Grant Office. This effort follows on a successful planning exercise that Maine contributed to in forming a national vision and implementation plan for marine aquaculture in 2016-17. For this new initiative, Maine Sea Grant will participate in 3-4 “communities of practice” that will emerge around high priority themes for the nation. Likely issues for Maine’s involvement will include Innovations in Fisheries, Climate Change, Ocean Acidification, Traditional Ecological Knowledge and others. Outcomes from this effort will help to inform future investments at the national level and will be based upon user needs as identified by the state Sea Grant programs.

The Alliance for Maine’s Marine Economy, a group of approximately 20 private and public institutions from academia, research and industry, received a $7M state of Maine bond award to improve infrastructure that supports expansion of Maine’s marine economy primarily in the seafood industry. The Alliance proposal included approximately $11M in matching funds making this an $18M investment that will be implemented and supported over the next 10 years. Part of the match includes investment by the University of Maine to fund a new member of the Marine Extension Team who will specialize in business development linking the public-private investments to economic impact. Primary investments are in place and a capital improvement grant program is being conducted in 2017 to allocate nearly $2M in infrastructure investment in the marine economy. Organizational development is underway utilizing a grant from the University’s RRF program to contract with a consultant. Governance, structure and an implementation framework will be completed in 2017. Maine Sea Grant’s role is uncertain, but the new hire will likely benefit from joining the Marine Extension Team.
<table>
<thead>
<tr>
<th>Partner Name</th>
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<tbody>
<tr>
<td>Acadia National Park</td>
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<tr>
<td>American Unagi, LLC</td>
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<tr>
<td>Atlantic States Marine Fisheries Commission</td>
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<td>Baxter State Park</td>
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<td>Bigelow Laboratory for Ocean Sciences</td>
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<td>Blue Hill Bay Mussels</td>
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<td>Boothbay Regional Land Trust</td>
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<td>Bowdoin College</td>
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<td>Cape Reddick River Association</td>
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<td>City of Saco</td>
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<td>Casco Bay Estuary Project</td>
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<td>City of Biddeford, ME</td>
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<td>City of Eastport, ME</td>
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<td>City of Ellsworth, ME</td>
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<td>City of Portland, ME</td>
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<td>City of Saco, ME</td>
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<td>City of South Portland, ME</td>
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<td>Clark University</td>
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<td>Coastal Enterprises, Inc.</td>
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<td>Coastal Maine Botanical Gardens</td>
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<td>Cobscook Community Learning Center</td>
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<td>College of the Atlantic</td>
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<td>Community Wellness Coalition</td>
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<td>Connecticut Sea Grant</td>
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<td>Cooke Aquaculture</td>
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<td>Cornerstones of Science</td>
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<td>Dalhousie University</td>
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<td>Damariscotta River Association</td>
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<td>Downeast and Acadia Regional Tourism</td>
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<td>Downeast Institute</td>
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<td>Downeast Resource Conservation and Development</td>
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<td>Downeast Salmon Federation</td>
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<td>E+K Shellfish</td>
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<td>Farm Service Agency (USDA)</td>
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<td>FB Environmental</td>
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<tr>
<td>F/V Lindsay Marie</td>
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<td>F/V Rachel</td>
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<td>F/V Oddball</td>
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<td>Federal Energy Regulatory Commission</td>
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<td>Fisheries and Oceans Canada</td>
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<td>Friends of Casco Bay</td>
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<td>Friends of the Boat School (Eastport)</td>
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<td>Frenchman Bay Partners</td>
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<td>Georges River Tidewater Association</td>
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<td>GRB Maritime Realty</td>
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<td>Gulf of Maine Council’s EcoSystem Indicator Program</td>
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<td>Gulf of Maine Research Institute</td>
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<td>Herring Gut Learning Center</td>
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<td>Hurricane Island Foundation</td>
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<td>International Pectnid Workshop</td>
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<td>Island Institute</td>
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<td>Kennebec Estuary Land Trust</td>
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<td>Lobster Institute</td>
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<td>Long Cove Oyster Company</td>
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<td>Maine Aquaculture Association</td>
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<td>Maine Aquaculture Innovation Center</td>
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<td>Maine Association of Realtors</td>
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<td>Maine Assoc. of Sea Kayak Guides and Instructors</td>
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<td>Maine Atlantic Salmon Museum</td>
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<td>Maine Audubon</td>
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<td>Maine Beaches Association</td>
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<td>Maine Boats, Homes &amp; Harbors Magazine</td>
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<tr>
<td>Maine Botanical Gardens</td>
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<td>Maine Bureau of Parks and Lands</td>
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<td>Maine Climate Adaptation Providers Network</td>
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<td>Maine Coast Heritage Trust</td>
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<td>Maine Coast Sea Vegetables</td>
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<tr>
<td>Maine Coastal Islands National Wildlife Refuge</td>
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<td>Maine Coastal Observing Alliance</td>
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<td>Maine Coastal Program</td>
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<td>Maine Commercial Fishermen</td>
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<td>Maine Community Foundation</td>
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<td>Maine Conservation Corps (AmeriCorps)</td>
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<td>Maine Cooperative Extension Service</td>
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<td>Maine Cooperative Fish and Wildlife Research Unit</td>
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<td>Maine Department of Agriculture, Conservation and Forestry</td>
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<td>Maine Department of Environmental Protection</td>
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<td>Maine Department of Health</td>
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<td>Maine Department of Inland Fisheries and Wildlife</td>
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<td>Maine Department of Marine Resources</td>
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<td>Maine Department of Revenue Services</td>
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<td>Maine Department of Transportation</td>
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<td>Maine EPSCoR (NSF)</td>
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<td>Maine Fishermen's Forum</td>
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<td>Maine Fresh Sea Farms</td>
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<td>Maine Geological Survey</td>
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<td>Maine Health Laboratory</td>
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<td>Maine Historic Preservation Commission</td>
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<tr>
<td>Maine Island Trail Association</td>
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<tr>
<td>Maine Lobstermen’s Association</td>
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<tr>
<td>Maine Mariculture Company</td>
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</tbody>
</table>
UMaine Extension, Sea Grant to offer aquaculture training course. 26 January 2017, Mount Desert Islander.

Weaver, A. The 7 weirdest beers from the sea. 26 January 2017, Hop Culture.

Goad, M. Here’s how to buy and store Maine oysters for your New Year’s party. Portland Press Herald, 25 December 2016.

Practice facilitation skills at UMaine Extension, Maine Sea Grant workshop. Sun Journal, 21 December 2016.


Valigra, L. Maine fisheries experts head to Japan to learn scallop practices, buy machinery. 3 October 2016, Mainebiz


Rising ocean temperatures threaten baby lobsters. October 2016, Fishermen’s Voice, V. 21 No. 20, pp. 13, 22.


Springuel to talk about Gulf. 6 September 2016, Mount Desert Islander.

Fishing communities need to prepare for gentrification challenges, say UMaine researchers. 23 August 2016, University of Maine.


Wiggles worth, S. From lobsterman to aquaculturist. Landings, August 2016.


Downeast Institute. July 2016. DEI Board Chair and two marine science summer campers appear on WERU Coastal Conversations. Downeast Institute for Applied Marine Research and Education.


Summer in Maine: A total forecast Part 4. 3 June 2016, WMTW (ABC 8).


Viola, A. Fishery keeps eye on lobster shell disease. 27 April 2016, The Lincoln County News.

Betts, S. State finalizes deal to preserve Tenants Harbor working waterfront. 8 April 2016, Bangor Daily News.

Weaver, J. Group consensus: No simple answers on rockweed harvesting. 7 April 2016, Ellsworth American.


Citizen scientist training offered around state. 29 March 2016, *The Maine Edge*.


Audubon scientists uncover winter home of Maine Atlantic puffins. 16 February 2016, National Audubon Society.

APPENDIX C: SEA GRANT COMMUNICATIONS & OUTREACH 2016

PEER-REVIEWED JOURNAL ARTICLES
(16 + 1 special issue)


BOOKS


BOOK CHAPTERS (1)


TECHNICAL REPORTS (15)


Maine Sea Grant. Southern Maine Beach Profile Monitoring Program (brochure), MSG-E-16-13. Orono, ME: Maine Sea Grant College Program.

Maine Sea Grant. 2016. The Catch: Writings from Downeast Maine, Volume IV. Orono, ME: University of Maine Fogler Library. catchjournal.org


Anderson, J., and N. Springuel. 2016. Of what value is a gull? Orono, ME: University of Maine Sea Grant Program. seagrant.umaine.edu/blog/value-of-a-gull


Downeast Fisheries Trail and Town of Bar Harbor. 2016. Welcome to Hadley Point (poster). Orono, ME: Maine Sea Grant College Program.


OUTREACH PUBLICATIONS continued


- January 27, 2017: Health insurance for lobstermen
- December 23, 2016: Waterfront communities prepare for climate change impacts
- October 28, 2016: Land Conservation in Downeast Maine
- September 23, 2016: Young Mariners Lead the Fishing Industry
- August 26, 2016: Young Mariners Go to College/Graduate School
- July 22, 2016: Young Mariners Go to Camp
- May 27, 2016: World Fish Migration Day and Local Stream Restoration
- June 24, 2016: Leave No Trace in Acadia National Park, Stewardship for the Next 100 Years
- April 8, 2016 (special show date): Gulls and Seabirds in the Gulf of Maine: How are They Doing?
- March 31, 2016: Penobscot Watershed
- February 26, 2016: Experience Maritime Maine


Wahle, R. American Lobster Settlement Index public portal. Orono, ME: University of Maine School of Marine Sciences. umaine.edu/wahlelab/american-lobster-settlement-indexalsi/american-lobster-settlement-index/


PRESENTATIONS (169; 19,609 ATTENDEES)

Anderson, P.S. Sea Grant and marine aquaculture in Maine. Friends of Belfast Bay, 18 February 2016, Belfast, ME. (20)


Anderson, P.S. Marine aquaculture in Maine. Northeast Agriculture and Biological Engineering Conference, 2 August 2016, Orono, ME. (150)

Anderson, P.S. Sea Grant and a Weather Ready Nation. North Atlantic Regional Team, 26 September 2016, Wells, ME. (30)

Anderson, P.S. Getting to the creative no and the articulate yes. Sea Grant Week, 12 October 2016, Newport, RI. (30)

Anderson, P.S. An overview of Maine Sea Grant (keynote). INORE Symposium, 30 October 2016, Orono, ME. (60)


Bartlett, C. Creating successful partnerships and collaborations for research and outreach. University of Maine Student Outreach Workshops, 29 April 2016, Orono, ME. (8)

Bartlett, C. River herring biology, ecology, and management. Beals Elementary School, 10 May 2016, Beals, ME. (44)

Bartlett, C. River herring biology, ecology, and management. Jonesport Elementary School, 19 May 2016, Jonesport, ME. (51)

Bartlett, C. River herring biology, ecology, and management. Edmunds Consolidated School, 23 May 2016, Edmunds, ME. (27)

Bartlett, C. River herring biology, ecology, and management. Pembroke Elementary School, 24 May 2016, Pembroke, ME. (16)

Bartlett, C. River herring biology, ecology, and management. Youth Conservation Corp, Moosehorn National Wildlife Refuge, 8 August 2016, Baring, ME. (30)


Cannon, J. Marine hazards and the clouds-to-coast model. York County Emergency Managers Meeting, 11 May 2016, York, ME. (20)


Cannon, J. “Clouds-to-Coast” project. Ocean Literacy Summit, 4 November 2016, Portland, ME. (200)

Cannon, J. Coastal hazard resiliency efforts in Maine. Dedication of the new tide gage located in Saco, Maine, 15 November 2016, Saco, ME. (20)


Frederick, C. Scratching the surface: An exploration of sea louse infectious pressure in Cobscook Bay using sentinel cages and hydrodynamic models. Sea Lice International Conference, 26 September 2016, Westport, Ireland. (150)

Frederick, C. A sentinel exploration of sea louse infestations in Cobscook bay, Maine. Northeast Aquaculture Conference & Exposition, 11 January 2017, Providence, RI. (100)

Goldstein, J.S. A fishery in flux: claw removal and its impacts on survivorship, behavior, and physiological stress in the Jonah crab (Cancer borealis). Society for Integrative and Comparative Biology, 4-8 January 2017, New Orleans, LA. (1,500)


Grant, K. Southern Maine Volunteer Beach Profile Monitoring Program. Ogunquit Women’s Club, 3 February 2016, Ogunquit, ME. (25)

Grant, K. Beach profile monitoring. Wells Reserve Home School Education Program, 8 February 2016, Wells, ME. (25)

Grant, K. Engaging stakeholders in flood defense in the Netherlands and New England, USA. Deltares, 29 June 2016, Delft, Netherlands. (20)

Grant, K. Engaging stakeholders in flood defense in the Netherlands and New England, USA. Deltares, 1 July 2016, Utrecht, Netherlands. (13)
PRESENTATIONS continued


Lasley-Rasher, R. Characterizing the Penobscot River estuarine transition zone during Atlantic salmon smolt migration. Atlantic Salmon & their Ecosystems Forum, 6 January 2016, Orono, ME. (180)


Lasley-Rasher, R. It takes guts to locate elusive crustacean prey, ASLO Ocean Sciences Meeting, 24 February 2016, New Orleans, LA. (50)

Lasley-Rasher, R. Using fish guts to sample elusive crustacean prey over long temporal scales. Benthic Ecology Meeting, 17 March 2016, Portland, ME. (40)

Lasley-Rasher, R. Using fish guts to sample elusive crustacean prey over long temporal scales. Graduate Exchange, 2 April 2016, Walpole, ME. (30)


Maxwell, E. History and ecology of the Neches River. Lamar University Honors College, 21 October 2016, Beaumont, TX. (10)


Mignone, A. Parameterizations to forecast overtopping discharge volume for the seawalls in Scituate and Hull Massachusetts. Environment Canada, 21 March 2016, Halifax, Nova Scotia. (10 est.)

Mignone, A. Parameterizations for overtopping discharge volume for the seawall located at the Wave Energy Research Center (WERC) in Lord’s Cove, Newfoundland. NOAA-Environment Canada Bi-Lateral Marine Focus Area Workshop, 3-5 May 2016, Ann Arbor, MI. (15 est.)

Mignone, A. Incorporation the parameterizations to predict overtopping discharge volume into the National Weather Services Nearshore Wave Prediction System. NOAA Center for Weather and Climate Prediction, 11-14 July 2016. (15 est.)

Mignone, A. Overtopping discharge volume using data obtain during storm events at the Seawall in Scituate, Massachusetts. VLab, 20 July 2016 (webinar). (15 est.)

Mignone, A. Parameterizations used to predict the overtopping of seawalls incorporating output from the National Weather Service’s Nearshore Wave Prediction System, 26-27 September 2016, Wells, ME. (32)

Morse, D. Scallop aquaculture update. Maine Fishermen’s Forum, 5 March 2016, Rockport, ME. (50 est.)

Morse, D. Opportunities for fishermen in aquaculture. Isle au Haut Fishermen, 4 April 2016, Isle au Haut, ME. (15)

Morse, D. Aquaculture in Maine. Penobscot Watershed Conference, 9 April 2016, Northport, ME. (40)

Morse, D. Shellfish aquaculture in Maine. Penobscot Bay Stewards, 10 May 2016, Belfast, ME. (30)

Morse, D. Scallop aquaculture in Maine. Maine Sea Grant Policy Advisory Committee, 17 June 2016, Orono, ME. (20)

Morse, D., and C. Davis. Shellfish production workshop. Techniques in Shellfish Aquaculture, 23 June 2016, Walpole, ME. (12)

Morse, D., C. Davis, and S. Belle. Damariscotta River tour. U.S. Senator Angus King site visit, 5 August 2016, Walpole, ME. (10)

Morse, D. Aquaculture. Harpswell Heritage Land Trust, 11 August 2016, Harpswell, ME. (20)


Morse, D. Shellfish aquaculture. Eastern Maine Skippers Program, 7 November 2016, Walpole, ME. (80)

Morse, D. Aquaculture production in Maine. University of Wisconsin, 17 November 2016, Milwaukee, WI. (25)

Morse, D. Shellfish production. Introduction to Aquaculture UMaine class, 22 November 2016, Orono, ME. (20)

Morse, D. Introduction to aquaculture. Vine Street School, 29 November 2016, Bangor, ME. (50)

Morse, D. Shellfish aquaculture. Eastern Maine Skippers Program, 1 December 2016, Blue Hill, ME. (7)

Morse, D. Scallop aquaculture. Northeast Aquaculture Conference and Exposition, 11-13 January 2017, Providence, RI. (35)

Morse, D. Aquaculture in Shared Waters. Northeast Aquaculture Conference and Exposition, 11-13 January 2017, Providence, RI. (30)


Ramberg-Pihl, N. Unraveling the impacts of competition in a rapidly changing climate on juvenile Atlantic salmon (Salmo salar) performance. IGERT Retreat, 9 September 2016, University of Maine, Orono, ME. (35)
Ramberg-Pihl, N. Unraveling the impacts of competition in a rapidly changing climate on juvenile Atlantic salmon (*Salmo salar*) performance. School of Biology & Ecology Seminar Lightning Talks, 4 November 2016, Orono, ME. (50)

Ramberg-Pihl, N., H.S. Greig, S. Coghlan, and J. Zydlewski. Unraveling the impacts of temperature, flow, prey availability, and competition on juvenile Atlantic salmon (*Salmo salar*) performance in a rapidly changing climate (poster). Climate Change Institute Borns Symposium, 14 April 2016, Orono, ME. (100)

Reardon, E. Mount Desert Island’s freshwater fisheries: a historical view. Human Ecology Forum, 1 June 2016, Bar Harbor, ME. (30)

Rodrique, M. Developing a sentinel longline survey for groundfish in the eastern Gulf of Maine. The International Council for the Exploration of the Seas Annual Science Council, 20 November 2016, Riga, Latvia. (100)

Schmitt, C. Science communication. Sea Grant Student Workshop, 26 February 2016, Orono, ME. (10)


Schmitt, C. The presidential salmon: fit for a king. Trout Unlimited Sebago Chapter, 2 April 2016, Scarborough, ME. (80)

Schmitt, C. Scientific communication vs. science communication. American Fisheries Society Student Chapter, 5 April 2016, Orono, ME. (10)

Schmitt, C. Atlantic salmon of the Penobscot. Penobscot Watershed Conference, 9 April 2016, Northport, ME. (30)

Schmitt, C. Atlantic salmon. College of the Atlantic, 22 April 2016, Bar Harbor, ME. (20)

Schmitt, C. Talking about Acadia’s changing climate with visitors, Acadia National Park Staff Training, 27 April 2016, Bar Harbor, ME. (40)

Schmitt, C. Reading of creative work, Poets Speak, 27 April 2016, Bangor, ME. (50)

Schmitt, C. The Atlantic salmon: fit for a president. Penobscot Bay Stewards, 17 May 2016, Stonington, ME. (30)

Schmitt, C. History of Kenduskeag Stream, World Fish Migration Day, 20 May 2016, Bangor, ME. (10)

Schmitt, C. Examples of framing science from Maine Sea Grant, a publicly funded boundary organization, UMaine Climate Change Course, 20 May 2016, Orono, ME. (20)

Schmitt, C. Talking about Acadia’s changing climate with visitors, Acadia National Park Staff Training, 26 May 2016, Bar Harbor, ME. (35)


Schmitt, C. Artists & scientists working together in Acadia, Mount Desert Island Biological Laboratory, 20 June 2016, Bar Harbor, ME. (55)

Schmitt, C. The Atlantic salmon: fit for a president, Southwest Harbor Public Library, 12 July 2016, Southwest Harbor, ME. (10)


Schmitt, C. The Champlain Society on Mount Desert Island. Big Summer Adventure Cruise, 21 August 2016, Bar Harbor, ME. (100)

Schmitt, C. Atlantic salmon of the Penobscot. Maine Maritime Academy Ocean Studies, 12 September 2016, Castine, ME. (56)


Schmitt, C. Communicating science to public audiences. Sea Grant Week, 13 October 2016, Newport, RI. (7)


Schmitt, C. Communicating science to public audiences. Department of Communication and Journalism Colloquium, 31 October 2016, Orono, ME. (12)

Schmitt, C. Communicating science to public audiences. Department of Wildlife, Fisheries and Conservation Biology, 14 November 2016, Orono, ME. (18)

Schmitt, C. Communicating science to public audiences. NOAA Fisheries, 15 November 2016, Orono, ME. (20)

Sims, M., and K. Kaczor. Best practices for disposing of pet waste and improving water quality, April Stool’s Day, 23 April 2016, South Portland, ME. (50)


Sims, M., and K. Kaczor. The status of pollution source tracking efforts in the Goosefare Brook. Ocean Park Conservation Society Meeting, 15 July 2016, Old Orchard Beach, ME. (20)


Springuel, N., et al. 11 Coastal Conversations public affairs radio programs, WERU-FM, East Orland, ME. (5,000 est.)

Springuel, N. Tourism opportunities for fisherman and aquaculturists. Maine Fishermen’s Forum, 3 March 2016, Rockport, ME. (35)

Springuel, N. Introduction to the Downeast Maine region: history and fisheries. College of the Atlantic, 29 March 2016, Bar Harbor, ME. (15)

Springuel, N. Tourism opportunities for aquaculture, Aquaculture in Shared Waters, 7 April 2016, Thomaston, ME. (30)
PRESENTATIONS continued

Springuel, N. The Downeast Fisheries Trail: culture-based recreation in the watershed, part I. Penobscot Watershed Conference, 9 April 2016, Northport, ME. (30)

Springuel, N. MDI’s working waterfront. Mount Desert Island Historical Society, 21 April 2016, Somesville, ME. (35)

Springuel, N. Introduction to navigation at sea. College of the Atlantic Family Nature Camp, 29 July 2016, Bar Harbor, ME. (18)

Springuel, N. Alaska’s marine mammals; Alaska’s seafaring explorers and naturalists: from Bering to Muir, Steller to Dall; The Gulf of Alaska: life beneath our wake; and The bountiful catch: Alaska’s commercial fisheries, from hook to fork. A Prairie Home Companion Cruise to Alaska and British Columbia, August 2016, Alaska and British Columbia. (500)

Springuel, N. The changing Gulf of Maine. Southwest Harbor Library, 13 September 2016, Southwest Harbor, ME. (40)

Springuel, N. Responding to coastal community needs in Downeast Maine. Hancock County Cooperative Extension Annual Meeting, 15 September 2016, Ellsworth, ME. (30)

Springuel, N. Large landscape conservation in the Downeast Region: views of the future, where do we go from here? (moderator). Down East Research and Education Network’s Convergence, 4 October 2016, Winter Harbor, ME. (65)

Springuel, N. Experience Maritime Maine. Down East and Acadia Regional Tourism Symposium, 10 November 2016, Winter Harbor, ME. (50)

Stancioff, E., and S. Tuler. Promoting climate awareness and adaptive planning in three Atlantic fisheries communities using the VCAPS process and system dynamics model. NOAA Increasing Resilience of Fishing Communities in a Changing Climate Workshop, 3-5 May 2016, Silver Spring, MD. (45)

Stancioff, E. University of Maine Extension/Maine Sea Grant/NECAN, Strategies for Advancing Science and Engagement of Coastal Acidification in the Northeast Coastal Acidification Network Regions. NOAA Social Coast Forum, 2016, Charleston, SC. (65)

Stancioff, E. Promoting climate change awareness and adaptive planning in Atlantic fisheries communities using dialogue-based participatory vulnerability analysis, mapping, and collaborative systems dynamic modeling. National Adaptation Forum, 13-14 May 2016, St Louis, MO. (120)

Stancioff, E. Building Sea Grant’s resilience toolbox: Maine lobster community based system dynamics model, Sea Grant network meeting, 11 May 2016, St. Louis, MO. (35)


Suskiwicz, T.S., F. Ferrario, C.A. Narvaez, D.B. Rasher, and R.S. Steneck. Dynamic times in the Gulf of Maine: predicting the future when the present isn’t anything like the past. Bowdoin College, 1 December 2016, Brunswick ME. (100)


Wahle, R. Predicting the future of the American lobster fishery in the Gulf of Maine and Southern New England: Trouble on the horizon? Benthic Ecology Meeting, 19 March 2016, Portland, ME. (50 est.)

Wallner, J. Linking ocean acidification and warming to the larval development of the American lobster (Homarus americanus). Benthic Ecology Meeting, 17 March 2016, Portland, ME. (50 est.)

Wallner, J. Linking rising pCO2 and temperature to the larval development, physiology and gene expression of the American lobster (Homarus americanus). ASLO Ocean Sciences Meeting, 26 February 2016, New Orleans, LA. (50)


Wilson, K. The food web of the Penobscot Estuary: the fish. Penobscot Watershed Conference, 9 April 2016, Northport, ME. (75)

Wilson, K., and T. Willis. River herring: the once and future fish. Bowdoin College Speakers Series, 1 November 2016, Brunswick, ME. (30 est.)


Zou, Q.P. Overview of coastal flooding research at UMaine. EFRaCC workshop, 13-16 June 2016, Swansea, Wales, UK. (50)

MEETINGS, WORKSHOPS, ETC. (207; 195,324 attending)

93 Maine Healthy Beaches Program (444 attendees)

42 water quality meetings with towns, researchers, watershed groups, etc. (142)

34 field trainings (224)

8 interagency collaboration meetings (22)

7 beach managers meetings (48)

2 laboratory trainings (8)

19 meetings related to The Beaches Conference 2017, February 2016 to January 2017, Wells, ME. (107)

14 meetings of the Infectious Salmon Anemia Technical Board (140)

12 Signs of the Seasons New England Phenology Program trainings, March-September 2016, Cape Elizabeth (2), Falmouth (2), Belgrade, Portland, West Boothbay, Waldoboro, Bridgton, Ellsworth, Auburn, Orono. (138)

9 Southern Maine Volunteer Beach Profile Monitoring Program Volunteer Trainings, February-December 2016, various locations. (52)

3 USA National Phenology Network, Phenology Network Coordinators' Webinar Presentations, April and September 2016, January 2017. (15)

2 Maine Marine Invasive Species Collaborative Meetings, February and October 2016. (16)

Maine Invasive Species Network Meeting, 2 February 2016, Hallowell, Maine. (85)

Shellfish Working Group, 10 February 2016, East Boothbay, ME. (40)

World Aquaculture, 20-26 February 2016, Las Vegas, NV. (5,000)

Maine Fishermen's Forum, 3-5 March 2016, Rockport, ME. (3,000)

Benthic Ecology Meeting, 15-16 March 2016, Portland ME. (500)

Maine Science Festival, 18-20 March 2016, Bangor, ME. (10,000)

6 Downeast Maine Fisheries, Fishermen, and Fishing Communities College of the Atlantic course field trips, 29 March-3 June 2016, Bar Harbor, ME. (15)

150 Frenchman Bay Partners Rockweed Meeting, 2 April 2016, Sullivan, ME. (80)

Experience Maritime Maine Stakeholder Meeting, 7 April, 2016, Rockland, ME. (40)

Penobscot Watershed Conference, 9 April 2016, Northport, ME. (400)

Maine Sea Grant Research Symposium, 14 April 2016, Orono, ME. (100)

New England Estuarine Research Society Spring Meeting, 14-16 April 2016, York Harbor, ME. (100 est.)

Maine Farm Service Agency and University of Maine Cooperative Extension: Programming for shellfish growers, 25 April 2016, Belfast, ME. (30)

College of the Atlantic Island Committee retreat, 25 April 2016, Somesville, ME. (10)

Ocean Technology in New England and Atlantic Canada, 27-28 April 2016, Orono, ME. (80)

National Adaptation Forum Joint Summit of the Sea Grant Sustainable Coastal Communities and Sea Grant Climate Networks, 11 May 2016, St Louis, MO. (35)

Damariscotta River Tour for Aquaculture in Shared Waters students, 13 May 2016, Damariscotta, ME. (15)

College of the Atlantic Island Committee meeting, 18 May 2016, Bar Harbor, ME. (10)

Orland Dam Forum, 1 June 2016, Orland, ME. (150)

Southern Maine Beach Profiling Program Planning, 9 June 2016, Wells, ME. (3)

Preserving the Working Waterfront, Stories from the Nation's Coast (webinar), 22 June 2016. (55)

Maine Association of Sea Kayak Guides and Instructors incident management meeting, 7 July 2016, Bar Harbor, ME. (12)

Maine Association of Sea Kayak Guides and Instructors incident management meeting, 20 September 2016, Bar Harbor, ME. (15)

Sea Grant Association Capitol Hill Briefing on Economic Resilience, 21 September 2016, Washington, DC. (60)

Oyster Trail of Maine, 26 September 2016, Darling Marine Center, Walpole. (30)

Engaging the Sea Grant Network to Build a Weather Ready Nation, 26-27 September 2016, Wells, ME. (32)

Kennebunkport Workforce Housing Listening Session, 28 September 2016, Kennebunkport, ME. (95)

Acadia National Park Intertidal Zone Management, 6-7 October 2016, Winter Harbor, ME. (30)

Northern Maine Children's Water Festival, Orono, ME, 11 October 2016. (700)

Addressing emergent threats to the Maine lobster fishery through an expanded and improved community based systems dynamic model co-developed by lobster harvesters, 20 October 2016, Walpole, ME. (8)


Maine Climate Change Adaptation Providers Network Annual Meeting/NH Coastal Adaptation Working Group, 2 November 2016, Portland, ME. (45)

Northeast Regional Phenology Network Meeting, 17-18 November 2016, AMC Highland Center, Bretton Woods, NH. (45)

Biosecurity and Aquaculture, 30 November 2016, Belfast, ME. (25)

Maine Lobster Leadership Institute, 2 January 2017, Northport, ME. (17)

Northeast Aquaculture Conference and Expo, 11-13 January 2017, Providence, RI. (450)

Sea Grant NMFS Aquaculture Conclave, 12 January 2017, Providence, RI. (50)

New Hampshire Sea Grant Beach Profile Monitoring Program Meeting, 26 January 2017, Wells, ME. (7)
## APPENDIX D: STUDENT SUPPORT

### Sea Grant Student Support: 1 February 2016 – 31 January 2017

Graduate Students (29); Degrees Received in 2015-2016 Reporting Year (5 - *marked with asterisk)

#### New PhD Support

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<th>Name</th>
<th>School</th>
<th>Degree Program</th>
<th>Project/Type of Support</th>
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<tbody>
<tr>
<td>Mackenzie Mazur</td>
<td>UMaine, SMS</td>
<td>PhD, Chen Lab</td>
<td>Sea Grant Scholar, research on effort and efficiency in lobster industry</td>
</tr>
<tr>
<td>Marissa McMahan</td>
<td>Northeastern University</td>
<td>Ph. D. Ecology, Evolution, and Marine Biology</td>
<td>Soft shell Green Crab PD Project</td>
</tr>
<tr>
<td>Lucy Zipf</td>
<td>Boston University</td>
<td>PhD</td>
<td>Marsh Sea Level Rise PD Project</td>
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#### Continuing PhD Support

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<th>School</th>
<th>Degree Program</th>
<th>Project/Type of Support</th>
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<tbody>
<tr>
<td>Skylar Bayer</td>
<td>UMaine, SMS</td>
<td>PhD, Marine Biology, Wahle Lab</td>
<td>Scallop Travel Support (Broad Reach, and regular PD)</td>
</tr>
<tr>
<td>Sam Belknap</td>
<td>UMaine Dept of Anthroplogy; Climate Change Institute</td>
<td>PhD Candidate, IGERT Fellow</td>
<td>Participatory Lobster Project (NOAA COCA)</td>
</tr>
<tr>
<td>Jie Cao</td>
<td>UMaine, SMS</td>
<td>PhD, Chen Lab; Post Doc - received April 2015, Chen Lab</td>
<td>Northern Shrimp/Herring Research Project, Chen, R-14-02; Evaluate lobster monitoring programs in Maine</td>
</tr>
<tr>
<td>Catherine Frederick</td>
<td>UMaine, SMS</td>
<td>PhD, Bricknell Lab</td>
<td>Fish health - sea lice NSGO AQ Research NSI (Bricknell)</td>
</tr>
<tr>
<td>Amalia Harrington</td>
<td>UMaine, SMS</td>
<td>PhD, Marine Biology, Wahle Lab</td>
<td>2016-2018 Wahle Lobster Project (climate, range shift, etc.)</td>
</tr>
<tr>
<td>Charlotte Carrigan Quigley</td>
<td>UMaine, SMS</td>
<td>PhD, Brawley Lab</td>
<td>Brawley/Redmond, Sea Vegetable phenology and culture methods project</td>
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<tr>
<td>Nicole Rahmberg-Pihl</td>
<td>UMaine, SMS</td>
<td>PhD, Climate Change Institute, IGERT Fellow</td>
<td>2016-2018 Grieg Research Project (salmon predation/climate)</td>
</tr>
<tr>
<td>Jocelyn Runnebaum</td>
<td>UMaine, SMS</td>
<td>PhD, Marine Biology, Chen Lab</td>
<td>SG Scholar, Cusk and Cod Bycatch/Barotrauma research</td>
</tr>
<tr>
<td>Brianne Suldovskyy*</td>
<td>UMaine, Communication and Journalism</td>
<td>PhD</td>
<td>Seafood Links Project (Lindenfeld, R-12-05)</td>
</tr>
<tr>
<td>Katherine Thompson</td>
<td>UMaine, SMS</td>
<td>PhD, Chen Lab</td>
<td>Northern shrimp</td>
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<tr>
<td>Haley Viehman*</td>
<td>UMaine, SMS</td>
<td>Interdisciplinary PhD, Ocean Engineering</td>
<td>McCleave/Zydlewski Research Project - impacts of tidal energy turbines on fish; 2016 PD for INORE Conference</td>
</tr>
<tr>
<td>Dongmei Xie</td>
<td>UMaine, SMS</td>
<td>PhD (with Qingping Zou)</td>
<td>Qingping Zou Wave Runup Project</td>
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### New MA/MS Support

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<tr>
<th>Name</th>
<th>School</th>
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<th>Project/Type of Support</th>
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<tbody>
<tr>
<td>Parker Gassett</td>
<td>UMaine, SMS</td>
<td>Dual Degree Program, Marine Biology/Marine Policy</td>
<td>Ecosystem Services (Strong Lab)</td>
</tr>
<tr>
<td>Lindsey Jones</td>
<td>COA</td>
<td>MPhil, Human Ecology</td>
<td>Natalie's course: Spring 2016: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Madelaine Kellett</td>
<td>COA</td>
<td>MPhil, Human Ecology</td>
<td>Natalie's course: Spring 2016: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Jacquelynn Miller</td>
<td>UMaine</td>
<td>MS, School of Earth and Climate Sciences</td>
<td>Alice Kelley Research - Loft to the Sea</td>
</tr>
<tr>
<td>Maura Neumisto</td>
<td>UMaine</td>
<td>MS, Marine Biology</td>
<td>Wahle, Deep Water Settlement</td>
</tr>
<tr>
<td>Charlotte Royer</td>
<td>UMaine, SMS</td>
<td>MS, Brawley Lab</td>
<td>Brawley/Redmond, sea vegetable phenology/AQ culture methods project</td>
</tr>
</tbody>
</table>

### Continuing MA/MS Support

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Degree Program</th>
<th>Project/Type of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greg LaBonte*</td>
<td>USM</td>
<td>MS, K. Wilson Lab</td>
<td>Karen Wilson SG Herring Research Project</td>
</tr>
<tr>
<td>Bai Li</td>
<td>UMaine, SMS</td>
<td>MS, Chen Lab</td>
<td>Evaluating the performance of conservation measures in the management of American lobster in the Gulf of Maine</td>
</tr>
<tr>
<td>Elisabeth Maxwell</td>
<td>UMaine, SMS</td>
<td>MS/MP Dual Degree Program</td>
<td>SG Scholar; Clam flat co-management and ocean acidification</td>
</tr>
<tr>
<td>Jordan Snyder</td>
<td>UMaine, SMS</td>
<td>Master's Degree program, Brady Lab</td>
<td>Primary Productivity Mapping/Habitat Suitability for AQ in Damariscotta River Estuary, NSGO AQ NSI (Brady)</td>
</tr>
<tr>
<td>Jesica Waller*</td>
<td>UMaine, SMS</td>
<td>MS, Marine Biology, Wahle Lab</td>
<td>2014-2016 Wahle Lobster project (settlement index)</td>
</tr>
<tr>
<td>Amy Webb</td>
<td>USM</td>
<td>MS, K. Wilson Lab</td>
<td>Karen Wilson SG Herring Research Project</td>
</tr>
</tbody>
</table>

### Other Professional Degree Student Support

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Degree Program</th>
<th>Project/Type of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noah Oppenheim*</td>
<td>UMaine, SMS</td>
<td>2014-2016 SG Scholar and Research Assistant; 2016 Knauss Class</td>
<td>Knauss Legislative Fellow, Office of Representative, Jared Huffman, CA</td>
</tr>
<tr>
<td>Karen Pianka</td>
<td>UMaine, SMS</td>
<td>2014-2014 Research Assistant; 2016 Knauss Class</td>
<td>Knauss Executive Fellow, Aquaculture Fellow, NOAA Fisheries Aquaculture Program Office</td>
</tr>
</tbody>
</table>
### New Undergraduate Support

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Degree Program</th>
<th>Project/Type of Support</th>
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</thead>
<tbody>
<tr>
<td>Alana Luzzio</td>
<td>Bowdoin College</td>
<td>BS Biology, 2017</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Vanessa Van Deusen</td>
<td>Barnard College</td>
<td>Unknown</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Mahellelah Shauer</td>
<td>Humboldt University</td>
<td>Bigelow REU Program</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Emily Geske</td>
<td>Colby College</td>
<td>Bigelow-Colby Semester Program</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Tyler Lewtan</td>
<td>Colby College</td>
<td>Unknown</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Albertha Ladina</td>
<td>Colby College</td>
<td>Unknown</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Claire Marconi</td>
<td>Bates College</td>
<td>BS Geology</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Kelsey Chenoweth</td>
<td>Bates College</td>
<td>BS Geology</td>
<td>Program Development (Webber)</td>
</tr>
<tr>
<td>Daniel Perry*</td>
<td>UMaine</td>
<td>BS Ecology and Environment Science</td>
<td>2016-2018 Grieg Research project (salmon predation/climate)</td>
</tr>
<tr>
<td>Mitchell Paisker</td>
<td>UMaine</td>
<td>BS Ecology and Environment Science</td>
<td>2016-2018 Grieg Research project (salmon predation/climate)</td>
</tr>
<tr>
<td>Cassidy Bigos</td>
<td>UMaine</td>
<td>BS Biology &amp; Anthropology Double Major</td>
<td>2016-2018 Grieg Research project (salmon predation/climate)</td>
</tr>
<tr>
<td>Ian Medeiros*</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Callahan Mine PD Research</td>
</tr>
<tr>
<td>Julie Bowser</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Savannah Bryant</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Melissa Chan</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Kaitlyn Clark</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Michael Cornish</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Meret Jucker</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Elsa Kern-Lovick</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Emma Kimball</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Name</td>
<td>School</td>
<td>Degree Program</td>
<td>Project/Type of Support</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>Casimir Pelegrini</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Leah Rubin</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Molly Samuels</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Nicholas Tonti</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Teagan White</td>
<td>COA</td>
<td>BA, Human Ecology</td>
<td>Springuel 2016 COA Course: Downeast Maine Fisheries, Fishermen, and Fishing Communities</td>
</tr>
<tr>
<td>Olivia T. Streit</td>
<td>UMM</td>
<td>Double: Marine Biology and Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Emma M. Kimball</td>
<td>COA</td>
<td>Human Ecology (fisheries co-management focus)</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Gillian H. O’Neal</td>
<td>MMA</td>
<td>B.S. Marine Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Melissa A. Rosa</td>
<td>UNE</td>
<td>Marine Biology; minor in Animal Behavior</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Aisling K. Farragher-Gemma</td>
<td>UMM</td>
<td>Marine Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Chelsey B. Mitchell</td>
<td>UMaine</td>
<td>Marine Science</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Rose M. W. Edwards</td>
<td>COA</td>
<td>Human Ecology, with focuses in Marine Science, Writing, and Art</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Bethany M. Stevens</td>
<td>UMaine</td>
<td>Marine Science</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Beretta Ficek</td>
<td>MMA</td>
<td>Marine Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Sophia D. Prisco</td>
<td>COA</td>
<td>Human Ecology with a concentration in Marine Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
<tr>
<td>Grace M. Shears</td>
<td>COA</td>
<td>Human Ecology, focus on Marine Biology</td>
<td>16-'17 Undergraduate Scholarship Recipient</td>
</tr>
</tbody>
</table>
APPENDIX E: POLICY ADVISORY COMMITTEE (as of June 2017)

Robin Alden
Penobscot East Resource Center

Linda Baker
State Legislature, Marine Resources Committee

Rebecca Van Beneden
University of Maine School of Marine Sciences

Paul Dest
Wells National Estuarine Research Reserve

Paul Dobbins
Ocean Approved

Susan Farady
University of New England

Don Hudson
Chewonki Foundation

Nathan Johnson
Ocean Renewable Power Company

Carol Kim
University of Maine Vice President for Research

Alvion Kimball
Orland Bed & Breakfast

Walter Kumiega
Marine Resources Committee

Rich Langton
NOAA Fisheries

Kathleen Leyden
Maine Coastal Program

Pam Parker
Maine Department of Environmental Protection

Kristan Porter
F/V Whitney and Ashley

Jon Prichard
University of Maine Cooperative Extension

Cathy Ramsdell
Friends of Casco Bay/Casco Baykeeper

Dwayne Shaw
Downeast Salmon Federation

Susan Swanton
Maine Marine Trade Association

Diane Tilton
Downeast Institute

Stephen Von Vogt
Maine International Trade Center

Carl Wilson
Maine Department of Marine Resources