MARCH 2016

Taking Fisheries to School: Workshop Report

Downeast Fisheries Partnership
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About Downeast Fisheries Partnership

Downeast Fisheries Partnership (DFP) is a collaborative effort with a vision of re-establishing fisheries as a means of sustaining coastal communities for many future generations: the communities of eastern Maine will sustain themselves forever by fishing.

Since its founding in 2013 by Downeast Salmon Federation, Penobscot East Resource Center, and Manomet, DFP has initiated conversations about fisheries with a broad range of stakeholders including nonprofits, fishermen, fisheries managers, and other interested individuals. Ideas and energy generated in this ongoing process have led to a raised level of awareness of the potential for fisheries restoration and a series of projects - from habitat restoration and watershed planning to creating a role for fishermen in stewardship and management.

DFP Partners

**DOWNEAST SALMON FEDERATION**

Our mission is to conserve wild Atlantic salmon and its habitat, restore a viable sports fishery and protect other important river, scenic, recreational and ecological resources in eastern Maine.

[www.mainesalmonrivers.org](http://www.mainesalmonrivers.org)
PENOBSCOT EAST RESOURCE CENTER

Since 2003, Penobscot East has worked to secure a future for the fishing communities of eastern Maine. We create programs that tap the deep knowledge of fishermen, provide innovative leadership on fisheries management, and advocate for community scale fisheries.

www.penobscoteast.org

MANOMET

For over forty years, Manomet has worked to use science as a common currency to combine the interests of diverse stakeholders for creating a more sustainable world.

www.manomet.org

SUNRISE COUNTY ECONOMIC COUNCIL

The Sunrise County Economic Council initiates and facilitates the creation of jobs and prosperity in Washington County, Maine, by working with a consortium of community-minded businesses, not-for-profit organizations, municipalities and citizens.

www.sunrisecounty.org

MAINE COAST HERITAGE TRUST

Maine Coast Heritage Trust conserves and stewards Maine’s coastal lands and islands for their renowned scenic beauty, ecological value, outdoor recreational opportunities, and contribution to community well-being. MCHT provides statewide conservation leadership through its work with land trusts, coastal communities and other partners.

www.mcht.org

COLLEGE OF THE ATLANTIC

College of the Atlantic enriches the liberal arts tradition through a distinctive educational philosophy, human ecology, which integrates knowledge from all academic disciplines and from personal experiences to investigate—and ultimately improve—the relationships between human beings and our social and natural communities.

www.coa.edu

MAINE FARMLAND TRUST

Maine Farmland Trust protects farmland, supports farmers, and advances the future of farming.

www.mainefarmlandtrust.org
Introduction

Fisheries Education

Fishing matters in eastern Maine, but it’s a livelihood that has changed dramatically in recent decades and will continue to change as the impacts of climate change and growing demand for seafood are felt. Over the past several months, concern among those engaged in rebuilding fisheries coalesced around a concern that eastern Maine residents had insufficient opportunities to learn about fisheries and, as a result, were unprepared to contribute to fisheries renewal or benefit from its full potential. Expanding opportunities to learn about the fisheries of Downeast rivers and coastal waters as well as their stewardship emerged as an avenue to make progress toward our “fishing forever” vision. In October 2015, DFP facilitated a workshop for educators to explore this idea further. Ultimately, the goal of this effort is to provide opportunities for children and adults to learn about fisheries at every stage of the educational continuum—from kindergarten through community-based, adult education programming. Such opportunities could prepare students in school - college bound or not and whether they intend to be fishermen or not - to be stewards of their local ecosystems. One workshop participant, Charlie Harrington, Maine Sea Coast Mission’s Director of EdGE Program, shared that the educational programming he manages for the Maine Sea Coast Mission is “concerned with kids who are staying in their communities, who will become selectman, members of the school board, etc.”

“The goal of fisheries education is to prepare students to participate in the ‘fish forever’ vision.”

ANDY WHITMAN, MANOMET

The workshop brought together 30 individuals representing 18 different organizations (see Appendix A) and provided a platform for participants to brainstorm how to build on existing fisheries-related education programs to expand fisheries-related topics in educational programs in both school-based and extracurricular settings.

Education can create conditions that allow people to work together in common understanding. Fisheries education is important at all ages in order to create lifelong learners and stewards of our marine resources. Continued education beyond school years is also vital to bring together communities around fisheries-related issues. All of this combined effort and teamwork can lead to resource restoration and protection. Andy Whitman, of Manomet, summarized this sentiment well: “The goal of fisheries education is to prepare students to participate in the ‘fish forever’ vision.”

The event was held at Schoodic Institute in Winter Harbor, Maine. Educators, members of the public, and other professionals interested in fisheries education discussed how to connect existing programs and engaged individuals to expand fisheries knowledge in and out of school. Knowledge and experience
sharing throughout the workshop strengthened existing and fostered new connections that have the potential to fill gaps in fisheries education. Such collective brainstorming is the first step towards improving fisheries-related educational programming, especially in eastern Maine.

**Opportunities for Fisheries Education**

In our Downeast coastal communities, many people are connected in some way to fisheries and the ocean, whether it be through employment, family, recreation or enjoyment of local seafood. Creating the conditions that may foster a sense of place is important for coastal community members of all ages since it contributes to a greater sense of place and encourages understanding of community roles in dynamic fisheries and marine systems.

There are a surprising number of fisheries-related education programs in the Downeast region (see Appendix B). They include school, afterschool, summer programs, and extend to adult education. Programs focus on intertidal ecology, hands-on habitat restoration, skills needed to be a fisherman or woman, and a guided trail to high points of Downeast Maine's maritime legacy, among many others. They provide opportunities for people of all ages and life stages to learn about fisheries, aquatic science, and eastern Maine's unique river and coastal ecosystems. These programs, however, reach a relatively small number of potential participants, and an even smaller number of actual participants; for example there are over 3,300 public high school students in the Downeast region and 86 of them participate in Eastern Maine Skippers Program. More needs to be done to expand fisheries-related educational programming to ensure that all have the opportunity to learn more and those who choose to do so can be accommodated.
Challenges and Prospects for Fisheries Education

It’s a good news, bad news story for eastern Maine’s schools. They tend to be small, rural, and underfinanced. But lack of resources makes them open to collaboration with outside groups, creating opportunities to expand exposure to fisheries for school-aged children. Currently such efforts include the Island Readers and Writers use of an alewife-themed book in their school-based literacy programs - and field trips that reinforce academics, such as those provided by the Maine Seacoast Mission’s EdGE program. Charlie Harrington said, “Our schools in the Downeast region don’t have field programs; the Mission’s programs connect the school curriculum to field work.” This outside-the-classroom learning is critical for forging strong connections between students and their environment.

The topic of fisheries creates challenges for teachers as it incorporates complex and interrelated topics including marine ecology, fisheries management, the economics of both fishing and seafood markets, as well as community social dynamics. Extracting and distilling useful information from a variety of data sources can be difficult for teachers and students alike. The Schoodic Education and Research Center (SERC) provides workshops for science teachers. Hannah Webber runs teacher workshops at SERC; she noted that, “The content changes, but the process doesn’t; the students are taught how to ask research questions, develop a hypothesis, and collect and process data to answer their question.” This training is useful in helping teachers, and by extension, students navigate these complex topics, apply them in a local context, and generate a shared understanding of the drivers of coastal ecosystems and their fisheries.

“Our schools in the Downeast region don’t have field programs; the Mission’s programs connect the school curriculum to field work.”

CHARLIE HARRINGTON, DIRECTOR OF MAINE SEA COAST MISSION’S EDGE PROGRAM

The workshop yielded some lessons learned by experienced professionals in the field. For fisheries-related educational collaborations to be successful, dedicated staffing is needed to coordinate the effort in terms of goals, communication, and expectations. For a successful collaboration or idea to turn into a program, there needs a blend of expertise at the table from scientists to teachers to businesses and beyond. With this structure and organization, programs also need to be flexible and responsive to chang-
ing interests as well as needs. Time is another factor that can determine the success of an educational effort. Workshop participants agreed that it takes about 10 years to build a program that is sustainable in terms of staff and funding. A larger lesson was drawn from the history of recent attempts at education reform; Charlie Harrington noted, “What we have done well in reform is what we have done together.”

Power of Networks

Our workshop group agreed that it is important to build on the network of individuals and organizations present: expand the network, reinforce it by following up on suggestions presented for collaboration, and promote the value of working together. Not only is it beneficial for professionals to network, but also for those networks to be extended to students and their communities. Val Peacock, Rural Aspirations and Eastern Maine Skippers Program, also noted, “Engaging kids in their own person, their own education, and their own community is important.” In this way, fisheries can be integrated more closely into the life of a community, and fisheries knowledge can be shared more widely.

Networks are essential for creating an effective and compelling movement. They are different from traditional organizations in that they cast their gazes externally rather than internally. They put their mission first and their organization second to advance their missions through trust rather than control. And they cooperate as equal nodes in a constellation of actors rather than relying on a central hub to command with top-down tactics. Networks allow participating organizations to develop interconnected solutions at the scale of the problems they seek to address. Networks are better positioned to leverage external resources than organizations acting independently. Ultimately, the whole is greater than the sum of its parts.

To visualize our existing and potential connections, workshop participants connected themselves (photo above) with colored lines representing those other participants whom they knew prior to the workshop, and as a result of the workshop, wanted to work with them going forward. This chaos of colored lines illustrated the interconnectedness of those working towards expanded opportunities for fisheries-related education and the incredible potential for leveraging these connections for expanding fisheries-related education in Downeast, Maine.

Where do we go from here?

At the end of our day we asked participants to reflect on the day’s discussions. Comments submitted with the workshop survey included, “took connections away,” and “hearing from other educators having success has revitalized my energy and added fuel to the fire.” “Within the opportunities and challenges of connecting K-12 with college, there is tremendous potential and today we started to think about how
to make it happen.” Some participants reflected on their own experience in school, “To think about my own high school experience and how horrible it was - and know there weren’t people thinking about how to make it better. Now I think about the potential for change and it can be overwhelming, but this is how you do it: get great people in a room together!” One participant expressed gratitude “for the fact that everyone took time from their demanding work to come to this meeting and I look forward to working with everyone soon.” That the workshop was “a great way to meet new people and hear new ideas,” reflected a general consensus. An overall message that rang true was that we “can be more connected and effective,” and that the workshop “has created momentum and a sense of hope. It will be revealing to see what happens in the future.”

As a result of the workshop, we now have an informal network of those interested in fisheries-related education in eastern Maine. Participants can build upon the connections they made at the workshop and share ideas and information. We look forward to reporting on emerging efforts, such as the fact that the Downeast Fisheries Partnership has received grant funds for a pilot fisheries education project with the Maine Seacoast Mission’s EdGE program. If you have an idea for how to expand fisheries education in eastern Maine or want to learn more about how this work is helping to create sustainable fisheries, please be in touch with Sarah Madronal (sarah@penobscteast.org) or any of the workshop participants listed in Appendix A.

“Within the opportunities and challenges of connecting K-12 with college, there is tremendous potential and today we started to think about how to make it happen.”

WORKSHOP PARTICIPANT
## Appendix A. List of Participants and Affiliations

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<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION</th>
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<tr>
<td>Alan Furth</td>
<td>Cobscook Community Learning Center</td>
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<tr>
<td>Amanda Beal</td>
<td>Maine Farmland Trust</td>
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<tr>
<td>Andy Whitman</td>
<td>Manomet</td>
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<tr>
<td>Anne Hayden</td>
<td>Downeast Fisheries Partnership</td>
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<td>Charlie Harrington</td>
<td>Maine Sea Coast Mission</td>
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<td>Chris Petersen</td>
<td>College of the Atlantic</td>
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<tr>
<td>Christina Fifield</td>
<td>Penobscot East Resource Center and Eastern Maine Skippers</td>
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<tr>
<td>Dave McKechnie</td>
<td>North Haven Community School</td>
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<tr>
<td>Deb Burwell</td>
<td>Paddling the Rapids</td>
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<tr>
<td>Dwayne Shaw</td>
<td>Downeast Salmon Federation</td>
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<tr>
<td>Gerard Zegers</td>
<td>University of Maine at Machias</td>
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<tr>
<td>Hannah Webber</td>
<td>Schoodic Institute</td>
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<tr>
<td>Jacob van de Sande</td>
<td>Maine Coast Heritage Trust</td>
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<td>John Hagan</td>
<td>Manomet</td>
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<tr>
<td>Katherine Cassidy</td>
<td>Lubec Landmarks</td>
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<tr>
<td>Kim Little</td>
<td>Gulf of Maine Research Institute</td>
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<tr>
<td>Korah Soll</td>
<td>Rural Aspirations Project</td>
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<tr>
<td>Megan Flenniken</td>
<td>Penobscot East Resource Center and Eastern Maine Skippers</td>
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<tr>
<td>Michael Giudilli</td>
<td>Cobscook Community Learning Center</td>
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<td>NAME</td>
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<tr>
<td>Rachel Gorich</td>
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<tr>
<td>Rebecca Stanley</td>
<td>Gulf of Maine Research Institute</td>
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<tr>
<td>Robin Alden</td>
<td>Penobscot East Resource Center</td>
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<tr>
<td>Ron Beard</td>
<td>University of Maine Cooperative Ext., Retired</td>
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<tr>
<td>Russell Heath</td>
<td>Downeast Salmon Federation</td>
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<td>RuthnFeldman</td>
<td>Island Readers and Writers</td>
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<tr>
<td>Sarah Madronal</td>
<td>Penobscot East Resource Center and Downeast Fisheries Partnership</td>
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<tr>
<td>Susan Conant Wilson</td>
<td>Public</td>
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<tr>
<td>Valerie Peacock</td>
<td>Rural Aspirations Project and Eastern Maine Skippers</td>
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Appendix B. Fisheries Education Programs in Downeast Maine

This document provides background information on several fisheries education programs in Downeast Maine from Kindergarten to adult education with different fisheries topic focuses. Programs are in alphabetical order. Document prepared by Sarah Madronal. (October 2015).

Cobscook Community High School

Based at the Cobscook Community Learning Centercampus in Trescott, this program focuses on getting students outdoors, engaged in service-learning projects, and learning directly from people in our community while building their leadership, outdoor, academic and personal skills. The CCLC partners with Calais High School to offer an ac-credited course of study for Cobscook Community High School Program students. The CCHS program is highly influenced by methods of experiential education, which is focused on direct experience followed by focused reflection. Experiential education can be found in outdoor education programs, environmental education programs, cooperative education, and service learning projects, all of which are woven into the CCHS experience.

Community Environmental Health Laboratory, MDI Biological Laboratory

The MDI Biological Laboratory’s Community Environmental Health Laboratory (CEHL) identifies, locates, and helps remedy threats to public health and the clean waters on and around Mount Desert Island by putting science in the hands of community volunteers, students, and teachers. Every project CEHL undertakes relies on volunteer efforts from students and community members and involves community education. Current projects at CEHL include research and restoration of eelgrass beds in Frenchman Bay, eelgrass-based education and outreach in local middle and high schools, swim beach water quality monitoring as part of the Maine Healthy Beaches Program, and red-tide monitoring as part of the Maine DMR Volunteer Phytoplankton Monitoring Program.
Downeast Fisheries Trail

The Downeast Fisheries Trail presents a rich educational opportunity for locals and visitors. Exploring fisheries heritage means learning about marine science, ecology, culture, history, policy and economics. Families and student groups visiting the Trail can learn about people that make a living off the sea, and participate in activities that bring fisheries heritage to life. Downeast Fisheries Trail partners reach out to schools and educational institutions to identify places where this project can complement existing curricula at all grade levels. Fisheries heritage-related activities can be taken on the road to festivals and events, and be implemented in schools, at summer camps, and within family and youth programs. Activities might include oral history projects, geo-caching, field studies in marine science, and other activities that help youth connect to the sea, its fisheries, and to the people who depend on them.

Downeast Institute

DEI’s mission is to develop marine educational programs for K-12 students and the general public to foster hands-on learning about our local marine environment and resources. Education programs include K-12 Teacher resources like lessons about the rocky shore, marine science lesson plans for teachers, and how to rear microalgae in a classroom setting. DEI also offers Marine Science Camp Sessions for grades K-12, which teaches kids about identifying marine plants and animals, gives them lab experience, and helps them to explore the habitat at the Rocky Shore at Black Duck Cove in Beals, ME.

Eastern Maine Skippers Program

The Eastern Maine Skippers Program (EMSP) provides aspiring commercial fishermen in eastern Maine high schools with the skills needed to be successful fishermen into the 21st century— in the water and on shore. Students who intend to become commercial fishermen benefit from an educational program that teaches how to be flexible and adaptive fishermen; responsive to an ever-changing fishery, ecosystem, and economy; learn to be entreprenuers who can hold their own with scientific researchers and policymakers. EMSP is aligned with state and national school standards, ensuring that students who participate graduate high school with the same rigorous academic preparation as other students and are prepared to enter a commercial fishery and college— not just one or the other.”
EdGE

EdGE (Ed Greaves Education) is a youth development program of the Maine Sea Coast Mission for students currently in grades Pre K-8 in coastal Washington and Hancock counties. It is designed to encourage youth to stay engaged in school, attain higher levels of achievement in and out of school, and develop the personal skills that will enable them to achieve this success using a wide range of interdisciplinary and experiential curriculum. EdGE provides afterschool, in school leadership programs and summer programs that include visual and performing arts projects, leadership training, innovative science and technology workshops, skill-building in math and language arts, and outdoor pursuits.

Environmental Living and Learning for Maine Students

The ELLMS Project is a collaboration among five residential environmental learning centers in Maine: Chewonki, The Ecology School, Schoodic Institute, and University of Maine Cooperative Extension 4-H Centers at Bryant Pond and Tanglewood. The mission of ELLMS is to encourage students to develop a lifelong commitment to environmental sustainability and stewardship, outdoor exercise and recreation, good nutrition, community building, and civic engagement through positive, nature-based activities, lessons, and challenges. Living outdoors builds connections among students and teachers, enlivens learning, fosters group unity, and creates an atmosphere in which trust and exploration can flourish. ELLMS participants gain a deeper understanding of the natural world and their place within it, higher self-esteem, and greater enthusiasm for learning. All of this sets the stage for higher performance and more positive classroom relationships.

Friends of Taunton Bay Education Center

The mission of The Taunton Bay Education Center is to educate citizens about the bay: its ecology, wildlife, marine inhabitants, human history, and economic connections with the community. The Education Center has maps and scientific research obtained from the Taunton Bay Study, completed in 2006; displays from the Historical Societies of the surrounding towns; and bay-related displays including horseshoe crab shells, lobster and clam harvesting equipment, and local seaweed products. The Center opened in July 2007, supported in part by a grant from the Community Building Fund of the Maine Community Foundation.
Hurricane Island Foundation

Hurricane Island is 10 miles southeast of Rockland and two miles southwest of Vinalhaven in the Fox Islands archipelago, Penobscot Bay, Maine. On Hurricane Island, both the Center for Science and Leadership and our Field Research Station initiatives work together to help students and scientists participate in authentic, hands-on field science and collaborative leadership programs and experiences. These programs reach public and private middle and high school students, college and university students, graduate researchers, undergraduate interns, amateur naturalists, scientists, sustainable engineers, and others.

Island Readers and Writers

Island Readers & Writers’ (IRW) mission is to inspire a passion for reading and learning among children living on Maine’s coastal and inland islands. IRW provides innovative book centered programs for children living in these unique places and engages children in hands-on science, art, music, and writing programs that encourages excitement for reading and the creative discovery it inspires. IRW encourages kids to focus on their own lives and the places where they live, with programs in their schools, in libraries and in other places where their families and community members join them in celebrating books and their stories.

LabVenture! GMRI

In GMRI’s LabVenture! Experience for 5th and 6th graders from Downeast to western Maine, students take on the role of scientist and conduct their own hands-on research to understand “Complex Systems”: How do five key species intersect in the Gulf of Maine? As scientists and fishermen students discover the connections among cod, lobster, herring, plankton, and humans in the Gulf of Maine ecosystem. They examine food webs, behavior patterns, the economics and impacts of fishing, in order to uncover how these species are inextricably woven together.
Maine Maritime Academy

Maine Maritime Academy’s Corning School of Ocean Studies offers two Bachelor of Science degrees in Marine Biology and Marine Science. A five year dual-degrees program is also offered which provides a Bachelor of Science degree in either Marine Biology or Marine Science plus an Associate of Science degree in Small Vessel Operations. The marine science program is a broad-based marine science curriculum encompassing the study of chemistry, biology, physics, geology, writing and communications, computer science, mathematics, humanities, and social sciences. Both programs prepare graduates for a diversity of career fields in ocean sciences including: state and federal agency work, fisheries, aquaculture, research, environmental protection or management, consulting, science education or graduate education.

Machias River Wigwams Program

The Downeast Salmon Federation and the Cobscook Community Learning Center offer a two week experience for Washington County teens interested in outdoor careers. The Machias River Wigwams crew may remove remnant log drive dams, survey culverts for fish passage for fish like endangered Atlantic Salmon, work repairing improving portage trails and campsites in the immediate vicinity of the Wigwams Rapids, and assist archaeologists in volunteer-friendly tasks such as clearing brush, moving dirt and sifting. As a long-term investment, this program works to instill a sense of stewardship in the next generation of Washington County guides and conservationists. These local teens may end up working in forestry where they would make harvest decisions that greatly impact salmon streams, or they may decide to work as Registered Maine Guides. In either case, their love for and familiarity with the habitat and best practices will help to protect the watershed and inform the decisions of others.

Marine Pathways at Deer Isle-Stonington High School

The Marine Studies Pathway at Deer Isle-Stonington High School is a learning experience designed to engage and inspire students, while equipping them with the practical skills they will need to succeed in every area of their adult lives. Students in the Marine Studies Pathway program will learn in the community, on the shore, and on the water, working alongside teachers, scientists, fishermen, and local marine professionals. They will acquire the knowledge, skills, and work ethic they will need to succeed in college and in challenging modern careers.
Outer Islands Teaching and Learning Collaborative

The Outer Islands TLC (Teaching and Learning Collaborative) is a group of island educators who are committed to creating a virtual classroom community where teachers and students will have access to a rich and supportive inter-island peer network. The mission of the TLC is to improve the quality and ensure the sustainability of one- and two-room island schools by creating collaborative educational and social opportunities for students across islands via technology and face-to-face learning opportunities. The Outer Islands TLC includes the island schools of Cliff, Cranberry Isles, Frenchboro, Isle au Haut, Matinicus and Monhegan. The project is a program of the Island Institute based in Rockland, Maine and has also received support from the Maine Seacoast Mission, the Maine Community Foundation, the Stephen and Tabitha King Foundation.

The Salmon in the Schools Program

The Salmon in the Schools program, organized by the US Fish and Wildlife Service, is a big part of the Downeast Salmon Federation's educational programming. The program takes place throughout the winter months, and into May. Participating schools raise 200 endangered Atlantic salmon eggs in the classroom, giving them the opportunity to care for an endangered species and see the young salmon transition from the egg lifestage in the winter, to young fry in the spring when they stock them into the river. Throughout this time, DSF staff work with local school groups in the classroom, at our hatchery facilities, and in the field. This gives the young students several opportunities to interact with fisheries professionals, and gives them an experience to remember and inspire continued education in the natural sciences.

Summer Field Institute

Summer Field Institute, taught by College of the Atlantic faculty, is a field-based immersion program in human ecology for high-school students and is eligible for college credit. In 2015 the course offered was Islands Thru Time for 16 students who spent a portion of their study out at COA’s Blair Research Station on Mount Desert Rock and the Eno Research Station on Great Duck Island, home to some of the largest known breeding populations of marine birds. Students are immerse in ecology, culture, and history of downeast Maine, learning from an interdisciplinary perspective. You will study and explore oceanography, marine biology, field ecology, history, literature, writ-ing, music, and media studies.
Sustainable Ocean Studies

Sponsored jointly by Waynflete School and Chewonki Semester School, Sustainable Ocean Studies is a field-based, adventure-filled, community-oriented experience open to students entering 10th, 11th, or 12th grade. Sustainable Ocean Studies blends hands-on learning with adventure as participants do important work on pressing issues related to ocean sustainability. Using the Gulf of Maine as a classroom and a laboratory, participants explore the Gulf and delve deeply into its rich ecology, economics, politics, and culture. SOS provides a fun, empowering, and relevant learning experience that cultivates important skills for academic success in post-secondary studies. This program challenges participants to make full use of both their creative problem-solving and critical thinking skills while studying ecological and cultural sustainability. SOS pays special attention to learning from local efforts in coastal Maine communities to preserve the marine resources on which those communities depend.

STEM

Maine Mathematics and Science Alliance (MMSA) is creating a new partnership with Axiom Education and Training Center. The “STEM Guides Downeast” project will create partnership network in Downeast Maine that connects teachers, mentors, students (age 10 – 18) and their parents, so kids can participate in STEM activities, resources and pathways on a recreational basis. STEM Guides strives to increase visibility and opportunity for STEM related aspirations and jobs to kids growing up in Downeast Maine regardless of college level education goals.

University of Maine at Machias

The University of Maine at Machias offers a Marine Biology program of study. UMM’s location is ideal for courses related to marine biology, ecology, and mariculture. Students have direct access to inter-tidal and sub-tidal marine habitats and organisms, finfish and shellfish aquaculture sites and hatcheries, and commercial fishing ports. This access to marine environments gives UMM students unique field and laboratory experiences. UMM also offers a biology degree which can include a fisheries concentration as well as partner with both the Downeast Institute and the Downeast Salmon Federation so students can get hands on experience at active facilities.
Downeast Fisheries Partnership is a collaborative effort with a vision of re-establishing fisheries as a means of sustaining coastal communities for many future generations: the communities of eastern Maine will sustain themselves forever by fishing.

www.downeastfisheries.org