Abstracts for the 2022 SEA Fellows Summer Science Symposium

#	Presenter	Email	Poster Title	Abstract	Authors
1	Atticus Scott	atticus.scott@maine.edu	Optimizing a cost-effective eRNA extraction method using zebrafish RNA	Environmental DNA (eDNA) and environmental RNA (eRNA) studies can be useful in monitoring changes in biodiversity in an ecosystem. eRNA is less stable than eDNA, meaning that eRNA is likely more accurate than eDNA at determining the organisms present in an ecosystem. Also, whereas an organism's DNA remains constant throughout their life, RNA expression varies by cell type, environment, and age, meaning that information on environmental stress or life stage could possibly be inferred from eRNA assays. In this study, the effectiveness of three different RNA preservation buffers, and three different RNA extraction protocols were analyzed using zebrafish eRNA from mesocosms. Performance was measured as total RNA extracted and zebrafish mRNA quantity derived from three RT-PCRs. It was hypothesized that the more expensive pre-made extraction kits and buffers would be more effective than the homemade extraction protocol and buffer. The results of this study will help us develop a cost-effective but reliable method for eRNA extraction and preservation.	Atticus Scott & Erin Grey, University of Maine
2	Austin Simmons	austin.simmons@maine.edu	Using mapping tools to support community decision making	Climate change presents many challenges for community planning, especially in small coastal communities with few resources. In this project the University of Maine at Machias GIS Laboratory and Service Center in partnership with the Sunrise County Economic Council explored how GIS mapping tools can be used to effectively inform decision making and planning. We generated comprehensive plan maps, including a marine resources map for the town of Jonesport. We engaged directly with community councils to receive input to guide map revisions, tailoring them to their needs. We also provided demonstrations and training in accessing and using online mapping tools, including a storm surge scenario online map, in the context of local planning efforts. This project provided decision making tools and training to increase capacity of local stakeholders to utilize the best available data for community decisions.	Austin Simmons, Amy Dowely, & Tora Johnson, University of Maine at Machias

3	Bodin Kim-Dailey	bodinkimdailey@gmail.com	How lobster injuries can cause death and how to limit them	Physical trauma is known to be a stressor that influences post-harvest mortality in lobsters harvested in Maine's fishery. This study was conducted to find where in the supply chain injuries of varying severity occur and their impact to lobster mortality rates in the fishery. Post-harvest mortality results in millions of dollars of lost profit every year, so identifying where injuries occur in the supply chain and how to limit them would be beneficial. Injuries and RAMP score (a method to measure reflexes and predict mortality) was recorded, along with the environmental conditions at each supply point, being temperature, cloud cover, wind speed, and time of day. Results will show where which type and kind of injury occur along the supply chain. This information can show where the most damaging injuries occur in the supply chain and in turn provide methods to decrease mortality and increase quality of lobster product.	Bodin Kim-Dailey, Cassandra Leeman & Damian Brady, University of Maine
4	Brendan Mirra	brendan.mirra@maine.edu	Understanding community attitudes toward ocean renewable energy	As the United States works to move away from harmful polluting fossil fuels toward sustainable energy sources, ocean renewable energy (ORE) has emerged as an environmentally friendly alternative. Despite the clear benefits of ORE, concerns from local communities can and have impaired project development. Research about how to gain community support is needed as opportunities for ORE development arise across the coasts. To better understand the relationship between people, place, and technology, this project collected and analyzed information gathered through an extensive literature review of dozens of articles, podcasts, and government documents across the disciplines of environmental science, sociology, and other relevant fields of study. Evidence from the literature review highlights the need for early, meaningful, and localized information sharing between project developers and community members. By actively including affected communities in ORE development, stakeholders will increase the likelihood of project success, and thereby decrease the nation's reliance on environmentally damaging energy sources. Increased attention to the dynamic between communities and projects will help propel states forward towards meeting their emissions targets while at the same time continuing to respect the concerns of coastal stakeholders.	Brendan Mirra, University of Maine & Wake Forest University; Jessica Reilly-Moman, Aspen Global Change Institute; & Heather Leslie, University of Maine

5	Caitlin Haley	caitlin.haley@maine.edu	Detecting *Calanus finmarchicus* in larval American lobster guts using eDNA	The Gulf of Maine's American lobster (*Homarus americanus*) fishery has undergone an unprecedented boom in recent decades and is now the nation's most valuable single-species fishery. But current research shows a disconnect between the high number of adult lobsters and low rates of larval settlement. Understanding this disconnect is a key goal for researchers, industry, and stock managers. A correlative analysis suggests that the decrease in settlement may be linked to the climate-related decline of the copepod Calanus finmarchicus, an energy rich prey species. Analysis of the lobster larval diet with eDNA tools can help test this hypothesis. In this study, we will determine the efficacy of a C. finmarchicus real-time PCR assay (rtPCR) by testing lab reared larvae fed only C. finmarchicus. We can then apply this methodology to field-caught larvae to determine if C. finmarchicus is present in their diet. These experiments will provide a better understanding of lobster recruitment, and inform future application of eDNA tools.	Caitlin Haley (1), Alex Ascher (1), Peter Countway (2), David Fields (2), Richard A. Wahle (1) where 1. University of Maine and 2. Bigelow Laboratory for Ocean Sciences
6	David Carter	david.carter1@maine.edu	Using light backscattering to estimate particle size relevant to carbon uptake	Backscattering (bb) occurs when light shines on a particle and gets reflected into the surrounding water. Within oceanography, backscattering is used as a high-resolution substitute for particle concentration in the ocean. These particles typically consist of phytoplankton and dissolved organic and inorganic material. To observe this in this project, two wavelengths of light are used, 532_nm (green), and 700_nm (red). These lights are produced by sensors on a profiling float, which is an instrument in the ocean that oscillates between 0-1 km. The data that comes back is often spiky. Small spikes are associated with phytoplankton, while large spikes are associated with groups of phytoplankton and larger particles. We hypothesize that when there are larger bb spikes, bb (532) and bb (700) will have similar levels. This analysis will be used to help better understand the process of carbon uptake in the North Atlantic.	David Carter & Margaret Estapa, University of Maine

7	Eliza Grenci	egrenci@emory.edu	Effects of ploidy on oyster growth in the Damariscotta River	In oyster aquaculture, careful selection of farm sites and ploidies is critical to ensure successful growth. Previous research has shown an insignificant growth advantage of triploid eastern oysters (*Crassostrea virginica*) over diploids in Maine. However, technologies to produce triploids have rapidly advanced, and growing conditions have changed since initial trials. As a result of these new conditions, an updated comparison in the growth of diploid and triploid oysters in Maine is necessary. This study tests the growth of triploid and diploid oysters at two field sites with different temperature regimes. Additionally, a lab component examines the growth at a constant temperature and differing food levels. The results of this investigation will help guide future oyster farmers in matching the right ploidy oyster to their farm site.	Eliza Grenci, Emory University & University of Maine; Tom Kiffney, University of Maine; & Damian Brady, University of Maine
8	Elizabeth Gilpatrick	emgilpatrick@gmail.com	Effects of intertidal gear on oyster shell shape and meat quality	Over the last decade oyster aquaculture has expanded rapidly in Maine. New and existing producers are interested in methods to improve shell quality to compete in in the half-shell market. A common technique to improve shell shape is intertidal gear, which utilizes energy from the tide to tumble oysters in their bags which breaks the outer shell rim. The constantly chipping shell results in a desirable deep cup shape, however, often at the cost of oyster growth. In this study, we are investigating the effects of four different intertidal gear types as well as stocking density on time to market, shell shape, and condition index at two different sites along the Damariscotta River. The results of this study will help determine (1) if intertidal farming is profitable and (2) the optimal gear type and husbandry practices to best suit consumer demand.	Elizabeth Gilpatrick (1), Tom Kiffney (2), Damian Brady (2), and Dana Morse (3, 4), where 1. Pennsylvania State University, 2. University of Maine, 3. Maine Sea Grant, and 4. University of Maine Cooperative Extension
9	Emily Leonard	emleonard531@gmail.com	Scaling up shifts in lobster habitat use in midcoast Maine	The American lobster, Homarus americanus, has experienced a fundamental shift in habitat use, and subsequently its population, distribution, and ecology. My project examines the spatial and depth scales over which American lobster populations have shifted from primarily inhabiting shelter-providing areas to more featureless habitats. Remotely operated vehicle (ROV) video is utilized alongside previous scuba diver surveys, since diver surveys are limited in their range and depth. Preliminary results from one site in 2020 have shown that population density increases with depth; these results are expected to continue across other sampling sites in midcoast Maine. It is possible that this shift in habitat use is indirectly affected by the rapid increase in temperature of the Gulf of Maine but more evidence is needed to determine the exact driver.	Emily Leonard, Robert Jarrett, and Robert Steneck, University of Maine

10	Emily Wagg	emily_wagg@brown.edu	What is the Maine Coastal Current and where does it go?	The Maine Coastal Current (MCC), and in particular its two branches, the Eastern Maine Coastal Current (EMCC) and the Western Maine Coastal Current (EMCC), have historically been understudied. The EMCC stretches from southern Nova Scotia to the Penobscot Bay and is thought to, at times, turn offshore and back into the Gulf of Maine. At other times it flows underneath the outflow of the Penobscot Bay and forms part of the WMCC. The WMCC stretches from just south of the Penobscot Bay down to Massachusetts. We used observations from previous studies made available through public databases to collect data on position, temperature, salinity, depth, and time of year the sample was taken. We found that the water-mass properties between the WMCC and EMCC are similar in some years and different in others, which is consistent with more limited previous observations.	Emily Wagg & Greg Gerbi, University of Maine
11	Etain Cullen	etain.cullen@maine.edu	Identifying Thraustochytrids and their role in marine ecosystems	Thraustochytrids (Family Thraustochytriaceae) are abundant, fungus-like, single-celled marine organisms that act as decomposers in their environments. In recent years, some species of thraustochytrids have been found to be a source of Omega-3 Fatty Acids and other beneficial compounds. Other than this, thraustochytrids are found in many fish diets, while others are parasites of important farmed organisms like hard clams. Although thraustochytrids have many different roles in their environments, they remain understudied, lacking complete lists of what exists within the U.S. and around the world. The goal of this project is to begin identifying species across Maine (Saco to Eastport) and to understand what lives in our marine waters. Once we determine what species are present, eDNA data can calculate population levels and may be used to interpret environmental roles. Our results will help identify beneficial species along with those we may need to be wary of.	Etain Cullen, Joyce Longcore, & Peter Avis, University of Maine

12	Evan Busch	evan.busch@maine.edu	Horseshoe crab aquaculture in Downeast Maine	In the interest of conserving Limulus polyphemus (American horseshoe crab) as commercial and biomedical harvest of adult individuals increases, we attempted to culture embryonic and juvenile L. polyphemus using bivalve aquaculture materials (upweller) readily available at the Downeast Institute (DEI). Adult L. polyphemus from the northernmost U.S. population were collected from Shipyard Point in Franklin, ME during May 2022. Using electrical stimulation with a 9V dry cell battery, spawning was induced, eggs were fertilized and placed in an upweller system used for culturing juvenile bivalves. None of the fertilized eggs (n = 25) have developed. Results may have been different had classical equipment used in other L. polyphemus culture projects been used. In addition, the limited number of eggs collected from the northernmost population suggests viable mass culture will have to be conducted using larger numbers of gametes that could easily be collected from the much larger southern population.	Evan Busch, University of Maine at Machias; Brian Beal, Downeast Institute & University of Maine at Machias
13	Jakob O'Neal	jakobponeal@smccme.edu	Using remote sensing to assess wild oyster populations	In the Damariscotta River estuary, wild American oysters were functionally extinct for more than a hundred years, but in the last twenty years, populations have begun to re-establish themselves. As ecosystems in this estuary change, together with the people who rely on them for multiple ecosystem services, it is important to understand the roles oysters and other marine species play. The goal of this project is to identify areas appropriate for extensive field surveys of intertidal American oysters. Using remote sensing techniques, we are assessing the extent of suitable intertidal habitat. Following this analysis, we will verify that the areas are appropriate for field surveys through in situ sampling and also quantify the abundance of oysters at those sites. We expect that the resulting data will inform future ecological research on wild oyster populations and their connections with farmed oysters in this and other estuaries.	Jakob O'Neal, Audrey Hufnagel, Sarah Risley, & Heather Leslie, University of Maine

14	Lena Kury	lena.kury@maine.edu	Testing underwater video to identify juvenile Atlantic cod (*Gadus morhua*)	Atlantic cod (*Gadus morhua*) are a demersal fish species found along the west coast of the Atlantic from Greenland to Cape Hatteras, North Carolina. Adult cod are predominantly found in rocky habitats at depths of 200-440 feet, while juvenile cod settle in nearshore coastal habitats and migrate as they mature. Eelgrass (*Zostera marina*) has been identified as important sheltering habitat for juvenile cod in coastal Maine. Previous studies relied on beam trawl tows and mark-recapture surveys to assess habitat use of juvenile fish, including Atlantic cod. This project will determine the effectiveness of baited remote underwater video (BRUV) for identifying and measuring juvenile cod in eelgrass habitat. The deployed BRUV units will use a mounted underwater camera to record video and will be deployed during both daylight and nighttime hours. Videos will be analyzed for fish presence and ability to confidently identify species observed.	Lena Kury, Florida State University & University of Maine; Elisabeth Maxwell; UMaine & Damian Brady, UMaine
15	Lindsey Karwacki	lindsey.karwacki@maine.edu	Reproduction and culture of *m*oon jelllyfish in Downeast Maine	The common moon jellyfish, *Aurelia aurita*, is a species of cosmopolitan gelatinous zooplankton. This study addresses comprehensively the culture *Aurelia aurita* in an aquaculture setting. The long-term goal is to understand the life history and culture of *Aurelia aurita* to create displays for public and private aquaria. During May 2020, adult *Aurelia aurita* were collected from Sawyer Park, Brunswick, Maine, and planula larvae removed from females and grown at the Downeast Institute Beals, Maine. Anticipated results are to have ephyra (the free-swimming stage before full-grown medusae) by November. *Aurelia aurita* are used in multiple ways: public education, sale for commercial or hobbyist aquaria, and sale for human consumption. *Aurelia aurita* aquaculture may be one possible solution to diversify coastal economies in Downeast Maine, especially at a time of declining lobster stocks accompanied by low market prices.	Lindsey Karwacki (1, 3), Brian Beal (1, 3), Evan Busch (1, 3), Madeline Williams (2, 3); where 1. University of Maine at Machias, 2. University of Maine, 3. Downeast Institute

16	Luke Goldman	luke.goldman@gmail.com	Detecting Atlantic cod spawning with eDNA	Atlantic cod went functionally extinct during the late 20th century and are still struggling to recover. This decline is believed to have occurred as a result of overfishing among other stressors. Although there have been efforts to protect some of their spawning grounds, we still do not know where most of these spawning grounds are in the Gulf of Maine. Opposed to traditional surveying methods -which are invasive, and time consuming- eDNA offers the potential to survey large geographic areas in a much shorter amount of time, and for a fraction of the cost. The methods of this study include sampling for eDNA in a controlled environment as well as the field, and comparing the amount of DNA present before and during spawning events. This will provide insight on the genetic signature of cod in the environment and allow for the inference of spawning activity.	Luke Goldman, University of Maine; Amber Garber, Huntsman Marine Science Centre; Graham Sherwood, Gulf of Maine Research Institute; Aaron Whitman, GMRI & Erin Grey, UMaine
17	Natalie Tejeda	natalietejeda113@gmail.com	How fast do oysters grow in intertidal systems compared to floating cages?	There are many approaches when it comes to oyster farming, and choosing a system that enables sufficient oyster growth is important. This project explores the introduction of an intertidal flap bag system in Merepoint Bay and how it compares to the current floating cage system. In order to compare how each system fosters oyster growth, I followed the oyster growth rates among oyster seed in both systems. Sampling was conducted through random selection and averages were taken in order to represent the growth rates in both systems. The results of this project will be discussed at the symposium. The main goal in introducing the flip bag system is to produce oysters appealing oysters with deeper cups.	Natalie Tejeda & Scarlett Tudor, UMaine
18	Owen Hamel	owenhamel17@gmail.com	Do lobsters move randomly to escape low oxygen environments?	The Gulf of Maine is rapidly warming, and hypoxic events are likely to become more frequent. This may negatively affect Maine's lobster fishery. Recent hypoxia in Cape Cod and Long Island Sound have resulted in lobster mortality inside of traps. Our research aims to determine sublethal behavioral effects of long-term exposure to various reduced-oxygen environments. Our laboratory experiments suggest lobsters exposed to low oxygen will exhibit orthokinesis to end up in higher oxygen habitats. Understanding lobster behavior in response to hypoxic environments could help fisheries managers minimize lobster mortality in traps by changing policies.	Owen Hamel, Robert Jarrett, & Robert Steneck, University of Maine

19	Phoebe Wagner	pwagner24@coa.edu	Overwintering of late season upweller oyster seed via cold storage to increase supply of early-season seed	Maine oyster hatcheries heat seawater in winter (January) to start seed production, resulting in added fuel costs and farmers receiving smaller seed at the season's start (April-May). If hatcheries could spawn in summer, taking advantage of naturally warmer water, then overwintering that seed out of water, in refrigeration, could potentially cut fuel costs and start the next growing season with larger seed. A potential problem is the limited diet provided by the hatchery, and whether it is sufficient for overwintered seed. We overwintered 2021 hatchery-raised seed, along with 2 groups that consumed a natural diet for varying amounts of time on the farm. In 2022, oysters from these treatments were graded 9-11 weeks after deployment to the farm, and growth and survival were measured for all groups. Results will inform us of the success of cold storage overwintering of hatchery seed compared to seed farm-raised on a natural diet.	Phoebe Wagner, College of the Atlantic; Rich Antosca, UMaine; Annie Fagan, Mook Sea Farm; & Meredith White, Mook Sea Farm
20	Rachael Smith	rachael.l.smith@maine.edu	Climate change effects on an invasive tunicate's attachment ability	The pancake batter, colonial tunicate, *Didemnum vexillum*, is invasive in Maine's coastal waters, and has negative effects on shellfish aquaculture. The sea squirt displays different methods of colony establishment including fragmentation. This, and high growth rates, allows colonies to quickly establish and smother benthic organisms. Gulf of Maine seawater temperatures have risen and become more acidic over the past 40 years. This study investigated how future climate change projections affect *D. vexillum* fragment attachment ability. Tunicates were collected from shallow subtidal near the Downeast Institute, Beals, Maine in July 2022. Four treatments (a = two temperatures; b = two pH levels; n = 3) were chosen to reflect present day and future climate scenarios. The fragments were placed in tanks on petri dishes for 24 hours, afterward two tests were performed determining how well they were attached. Expected results include differences in fragment's attachment level between projected future and present day climate conditions.	Rachael Smith & Brian Beal, University of Maine at Machias

21	Rose Duane	rose.duane@maine.edu	Circadian rhythm cycles and its effect on genetic code of sea scallops (*Placopecten magellanicus*)	Sea scallops (*Placopecten magellanicus*) are oceanic mollusks that lives in cold deep-sea environments around the world. The anatomy of sea scallops includes an abductor muscle, which they are able to constrict and expand to swim, gills, and over 200 eyes surrounding the outer edge of the scallop's shell. Every biological creature follows a circadian rhythm, which is the body's internal 24-hour clock. This clock can be disrupted by light (day) and dark (night) cycles, and if not properly managed can cause severe dysfunction in the physiology of an animal. With their 200 eyes, we can assume sea scallops are greatly impacted by these light and dark cycles. For our experiment, our lab has been obtaining mature sea scallops from the Downeast Institute and raising them in 14℃ saltwater tanks. After a three-week acclimation period where the scallops are exposed to normal undisturbed light and dark cycle, they will then be transported to a dark room. In the dark room, the scallops will be exposed to 8-hour light periods, 16-hour dark periods, 8-hour dark periods, 16-hour light periods, 24-hour dark periods, 24-hour light periods, etc. After habituating to these different light and dark cycles, the scallops will be harvested for their tissue and undergo PCR testing, to extract their RNA to turn into DNA. From there, we hope to see that by exposing the sea scallops to improper circadian cycles it will have impacted the bivalves on a molecular/genetic level.	Mia Vargas, Rose Duane, Gabriella Peluso, & Timothy Bowden, University of Maine
22	Ruby Krasnow	ruby.krasnow@maine.edu	Effects of gear type and environment on oysters grown in a lobster impoundment	Favorable environmental conditions and access to seafood distribution infrastructure make vacant lobster pounds promising sites for Maine's rapidly expanding oyster aquaculture industry. The recent establishment of oyster farms within lobster pounds raises many questions about the environmental conditions of a pound, how these conditions impact metrics of oyster quality, and the ideal methods of pound-based oyster cultivation. Proper grow-out methods are critical to achieve a successful oyster harvest. However, limited comparative data makes it challenging for farmers to decide which gear type they should invest in. Data will be collected from oysters deployed in three common gear types (bottom-planted, floating bags, and floating cages) inside and outside of a lobster pound in Bremen, ME. We seek to identify how key conditions– temperature, salinity, tidal energy, and food availability— differ inside a pound and to examine the impacts of environment and gear type on oyster mortality, growth, shape, and biofouling.	Ruby Krasnow (1), Robert Cuddy (1, 2), Tom Kiffney (1), Boe Marsh, (2), Damian Brady (1), where 1. University of Maine, 2. Community Shellfish

23	Sophia Pelletier	sophia.pelletier@maine.edu	Changing sea star populations in the Gulf of Maine	As a keystone species, the common Atlantic and Forbes sea stars (*Asterias rubens* and *Asterias forbesi*) are important components of intertidal and subtidal marine communities. In the Gulf of Maine, sea star numbers have been declining for decades. Moreover, spatially and temporally explicit data on this pattern and its potential drivers are limited. The goals of this study are to: (1) synthesize historical and contemporary data, including citizen science observations, to document sea star population dynamics in the Gulf of Maine through time, and (2) deploy targeted intertidal surveys to investigate the current distribution of sea stars and their primary prey, blue mussels (*Mytilus edulis*). Together, our field surveys and synthetic analyses will support future monitoring efforts and assessments of change, and will promote an understanding of how the Gulf of Maine intertidal community is responding to climate change and other stressors.	Sophia Pelletier, University of Maine; Richard Wahle, University of Maine; Melina Giakoumis, City University of New York; & Heather Leslie, University of Maine
24	Brady Kaelin	brady.kaelin@maine.edu	Can mushroom spores germinate after spending time in seawater?	The majority of terrestrial fungal spores have an unknown tolerance to saline water. Fungal species known to exist in mainland environments can be found on nearby off-coast islands. Recently, environmental DNA efforts have discovered traces of non-native fungal species in seaports across the globe. Fungal spores, being the most mobile biological structure of a fungus, are most likely responsible for these DNA traces. It is hypothesized that, alongside species distribution via air dispersal, fungal spores may be able to survive saline environments for a long enough period of time to be carried to off-coast islands to germinate. There is a lack of up-to-date information regarding fungal spore viability in saline water, therefore, the purpose of this study is to strengthen that knowledge by examining fungal spore viability before and after submersion in saline-concentrated waters for a number of weeks/months. A study will be conducted utilizing various Maine-native fungal spores, tested for viability prior to experimentation, and submerging samples in varying concentrations of saline water. Following a set amount of time, samples will be retrieved from the water and tested for viability via petri dish culturing. At least two saprophytic basidiomycetes and at least one saprophytic ascomycete will be selected for this experiment. Using data retrieved from this experiment, it can be concluded whether or not fungal spores are capable of germination following submersion in sea water for an extended period of time. This information will be useful in understanding human impact of sea transportation when fungal spores are carried unintentionally for intercontinental distances.	Brady Kaelin & Peter Avis, University of Maine

Available online only:

25	James Custer	jcuster1@une.edu	How does temperature affect the movement of invasive crabs in Maine?	The Asian Shore Crab (Hemigrapsus sanguineus) is an invasive crab native to East Asia which has spread throughout the Eastern United States coast. These invasive crabs have disrupted food chains across the Gulf of Maine, driving out native crab populations by outcompeting them for resources as they continue to move northward. Asian Shore Crabs have also been shown to outcompete the similarly invasive European Green Crab (Carcinus maenas) in areas south of Maine but have yet to do so in the Gulf of Maine. The difference in dominant invasive species may be due to temperature sensitivity of H. sanguineus. Our research aims to determine thermal stress tolerances for H. sanguineus. With this we hope to be able to better predict movements of the Asian Shore Crab across the Maine coastline as sea temperature continues to rise.	James Custer, Emily Pierce, & Marcus Frederich, University of New England
26	Samantha Bengs	samantha.bengs@maine.edu	Influences of scallop farming gear on pelagic ecosystems	Atlantic sea scallops (*Placopecten magellanicus*) are an ecologically and economically important species in the Gulf of Maine. Despite their commercial significance, studies at three sites in the Gulf of Maine - off Swans Island, Jeffreys Bank, and Stellwagen Bank - show that dredging for scallops is incredibly destructive to benthic habitat (Auster et al 1996). Aquaculture is much less disruptive to benthic habitats and can help alleviate fishing pressure on wild scallop populations. As more aquaculture structures appear in coastal Maine waters, the impact this growth has on pelagic food webs is not widely understood. By studying the larval dynamics and abundance of sea scallops and the zooplankton diversity at three farmed sites and at a determined distance from the sites, we can gain a better understanding of how aquaculture lines are affecting planktonic communities and optimize scallop aquaculture practices.	Samantha Bengs, University of Southern Maine; Phoebe Jekielek, University of Maine & Hurricane Island Center for Science and Leadership; Nichole Price, Bigelow Laboratory for Ocean Sciences; & Rachel Lasley-Rasher, University of Southern Maine

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