NWWW BOSTON 22

NWWN National Working Waterfront Network

SENSE *of the* Conference

Working Waterfronts: Traditions and Transitions

In partnership with the Urban Harbors Institute of UMass Boston

NATIONAL WORKING WATERFRONT NETWORK CONFERENCE

JULY 19-21, 2022 | BOSTON, MASSACHUSETTS

nationalworkingwaterfronts.com

NWWW BOSTON 22

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Working Waterfronts: Traditions and Transitions

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BACKGROUND AND OVERVIEW

In July 2022, nearly 200 people gathered at the sixth National Working Waterfront Network Conference in Boston, MA to share ideas and information about working waterfronts. Participants came from all coastal areas of the United States and represented a variety of waterfront sectors and interests. The theme of the event was "Working Waterfronts: Traditions and Transitions." This conference built upon the successes and recommendations from the previous five symposiums in Virginia (2007), Maine (2010), Washington (2013), Florida (2015), and Michigan (2018). It was the first to be held in Boston at the waterfront campus of the University of Massachusetts Boston.

The National Working Waterfront Network (NWWN) is a nationwide network of businesses, industry associations, nonprofits, local governments and communities, state and federal agencies, universities, Sea Grant programs, and individuals dedicated to supporting, preserving, and enhancing our nation's working waterfronts and waterways. Participation in the NWWN is open to all individuals and organizations involved in working waterfront issues at the federal, state, and local level. Our mission is to increase the capacity of coastal communities and stakeholders to make informed decisions, balance diverse uses, ensure access, and plan for the future of their working waterfronts and waterways.

The following report provides an overview of the conference including major themes and the challenges and opportunities highlighted during plenary and concurrent sessions. It also provides a synopsis of participant demographics, plenary sessions, and conference field trips.

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(as of conference date)

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ACKNOWLEDGEMENTS

The NWWN would also like to thank Elyse Larsen and Jeffrey Brodeur for their commitment to the NWWN. We are grateful for their expertise, their dedication, and their willingness to go the extra mile for the Network. We wish them luck on their next adventures. We would also like to thank Saphier Events for all of their hard work and support to make this conference come to fruition.

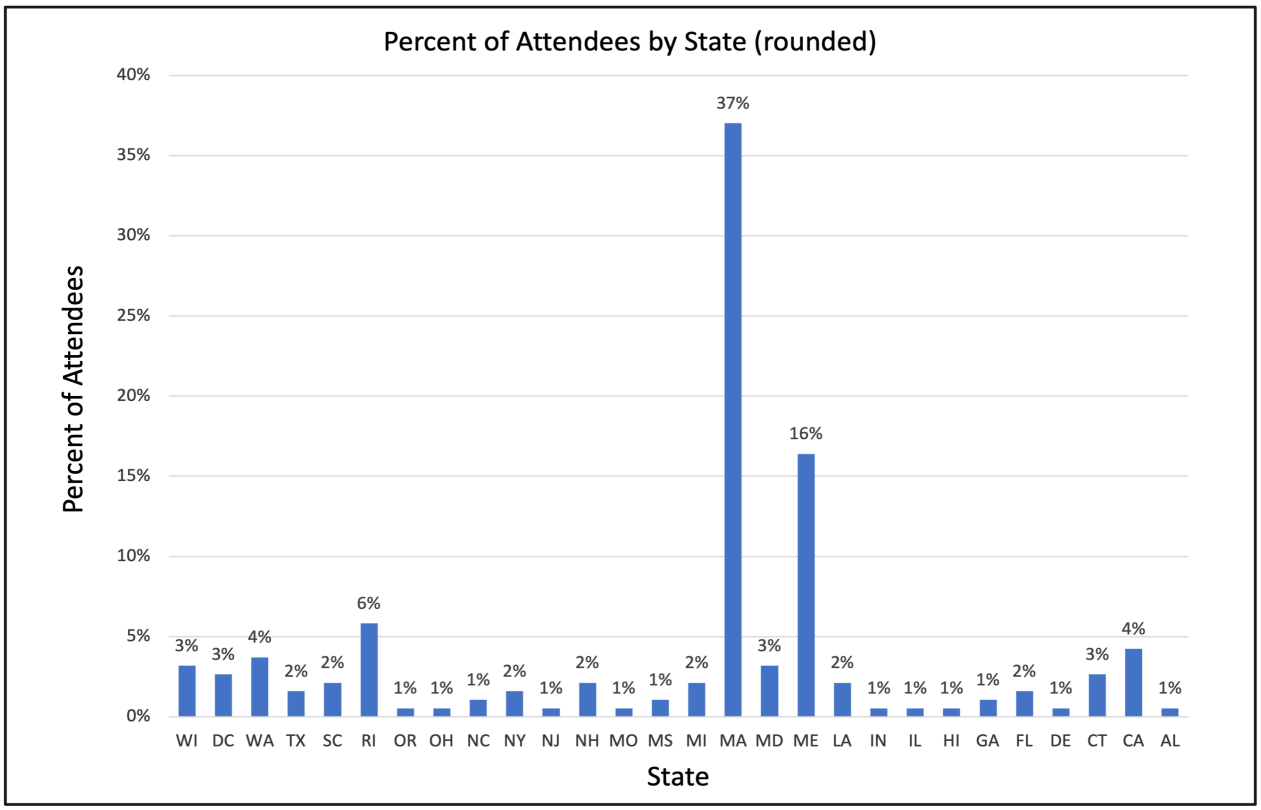
CONFERENCE AT A GLANCE

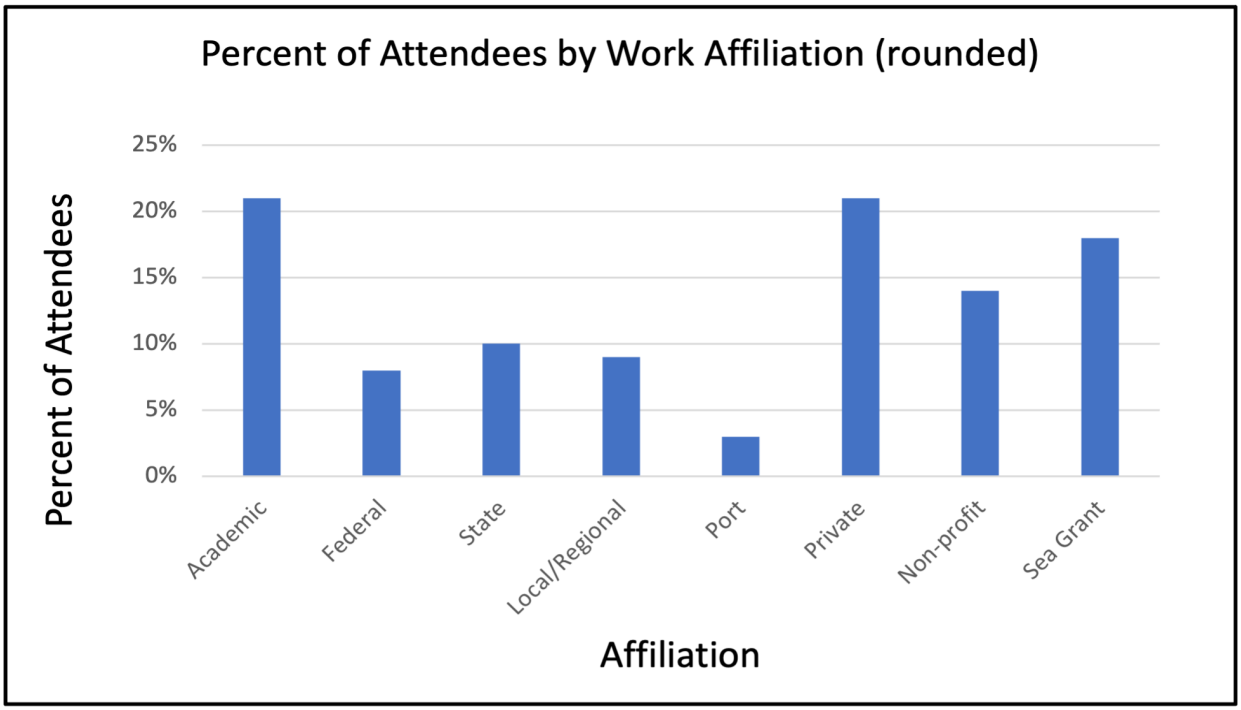
The conference took place over three full days from July 19th to July 21st, 2022. Prior to the official start of the conference, on July 18th, there was a free NOAA training "Estimating the Local Marine Economy" and three full-day field trips. These included trips to New Bedford, MA, Island Creek Oyster Farm in Duxbury, MA, and Provincetown, MA.

The first day of the conference itself began with a plenary on developing the working waterfront workforce and an evening welcome reception at Marina Bay in Quincy, MA. The Lieutenant Governor of Massachusetts, Karyn Polito, was a keynote speaker on the second day followed by an afternoon of field trips in and around Boston. The final day began with a keynote address from U.S. Representative Chellie Pingree (1st District, Maine) and a robust discussion of key working waterfront topics, and finished with concurrent sessions.

PARTICIPATION

Approximately 189 participants gathered for the 2022 conference. Participants came from 28 different states with the majority from Massachusetts (37%) and Maine (16%).





PLENARY SESSIONS

The conference opened with a panel of workforce development experts from across the United States (day one) and was followed by keynote speakers from Massachusetts (day two) and Maine (day three).

JULY 19, 2022

"Developing and Diversifying the Workforce of Working Waterfronts"

Panelists: Natalie Springuel (Moderator), Maine Sea Grant; Robert Brown III, Washington Maritime Blue; Ben Conniff, Luke's Lobster; Seth Latrell, City of Salem, MA; Dominique Seibert, Louisiana Sea Grant

The conference began with a plenary focused on developing and diversifying the working waterfront workforce. Experts from around the country shared the successes and challenges associated with finding and creating skilled members of the workforce, with an emphasis on reaching younger under-served populations to help fill critical gaps.

Highlights:

- There is a need to create opportunities for introducing younger generations and more diverse populations to maritime activities to help fill the workforce gap
- When working with under-served youth, it is important to address barriers to participation in training programs, such as a lack of transportation to/from activities, the need for compensation, negative perceptions (including among parents) regarding marine-related careers, and the availability of information from trusted resources in multiple languages
- The fishing industry can be difficult to enter due to factors such as cost (e.g., of vessels, licenses) and obtaining experience. Luke's Lobster is providing training and helping BIPOC youth enter the Maine lobster fishery
- Offshore wind presents new employment opportunities along the working waterfront
- We can increase participation in workforce development programs by reaching new

populations (through social media, perhaps) and by creating a sense of belonging for those who do not typically see themselves in these types of careers.

JULY 20, 2022

Keynote: Karyn Polito, Lieutenant Governor of Massachusetts

The Lt. Governor of Massachusetts has been a long-time supporter of working waterfronts. Under her leadership, the State makes investments in coastal communities through the Massachusetts Seaport Economic Council grant program. She stressed the importance of looking at these grants not as transactions, but as investments in the people, neighborhoods, and jobs impacted by the grants.

Highlights:

- Polito encouraged attendees to take what they learn at the conference and use it to help transform the future, keeping in mind the importance of tradition but recognizing the need to make changes too.
- Polito discussed her involvement in the Seaport Economic Council (SEC) which helps communities reimagine their economic opportunities and coastal development and how to achieve greater access to working waterfronts. She noted that the Seaport Economic Council had invested $66M since 2015 and has made grants to more than 50 coastal communities in MA.
- Polito expressed the need for good communication and noted that the Seaport

JULY 21, 2022

Keynote: Chellie Pingree, United States Representative, 1st District Maine

As a leader in advocating for working waterfronts at the state and federal level, Congresswoman Pingree joined the conference remotely to share her perceptions of the greatest needs and opportunities. She emphasized that out of 3,300 miles of Maine's shoreline, only 22 miles are used as working waterfronts, highlighting the vulnerability and importance of these special places.

Highlights:

- The Maine coastline is critical to the history, culture, environment, and economics of Maine but is very vulnerable to climate change. Impacts are already being seen, including in aquaculture, with invasive species, and with lobster.
- Efforts are underway at the national level to help address working waterfront issues. These include the Keep America's Waterfront Working Act and the Ocean Regional Opportunity and Innovation Act.
- The National Working Waterfront Network members need to help educate elected officials and raise awareness about the role of working waterfronts and the issues they face–including the aging workforce, climate change, and displacement of water-dependent uses.

PLENARY SESSION:

HOT TOPICS FOR NWWN: FINDING COMMON GROUND (JULY 21, 2022)

The diversity of interests represented by NWWN members at the conference created an opportunity to have cross-sector discussions about topics common to nearly everyone involved in working waterfronts. This plenary session on the final day of the conference began with remarks from a panel of experts and was followed by breakout sessions with the audience on common themes surrounding working waterfronts, including workforce needs, pollution, partnerships, climate resilience, public access, communication, and permitting and regulations.

Panelists included Nicole Faghin (Moderator), Chair, NWWN; Sam Belknap, Island Institute; Randall Lyons, Massachusetts Marine Trades Association; and Joseph Sutkowi, Waterfront Alliance.

The notes below reflect the discussions that occurred during each topic-specific breakout session.

1. Waterfront Workforce Needs

A key theme at the NWWN 2022 conference was the future of the working waterfront workforce and the need for resources and opportunities to promote careers in maritime activities. Important topics brought up during this breakout discussion included:

- Liability issues with minors or non-employees on job sites can prevent opportunities for youth to gain experience on the water and/or at the waterfront.
- Offering a stipend and/or other incentives can increase interest in internships or job trainings.
- Transportation can be a barrier for students who live inland with a long commute or only have access to public transportation. Supplying housing in close proximity to programs and/or by providing transportation as part of the programs can promote engagement.
- We need to increase knowledge about training and job opportunities in commercial fishing and other maritime industries by improving communication through online resources (job postings, internship programs, funding opportunities, workforce needs) and in-person

2. Pollution

Pollution is a major concern along working waterfronts and combatting this issue is complex. Conversation during this breakout group highlighted that:

- Working waterfronts are places of focused activities and sometimes tensions arise between environmental advocates and those involved in working waterfront operations
- There are opportunities to reduce environmental impacts of working waterfronts. One way is to reduce emissions from trucks and vessels through electrification and the use of alternative fuel sources. This can be challenging when fuel sources are not readily available and waterfronts are not equipped to support electric vessels.
- There is a need for greater research and education regarding the sources, impacts, and mitigation strategies related to pollution and working waterfronts.

- As efforts to reduce pollution are initiated, careful attention must be paid to the impacts on surrounding communities. For example, affordable housing around working waterfront communities may suffer from the environmental impacts of waterfront activities, yet when those activities are modified to reduce environmental impacts, efforts should be in place to preserve the affordable housing and prevent gentrification.
- There is an opportunity to reduce environmental impacts of working waterfront activities through regulations targeting corporations and businesses. Incentives should be considered as part of new regulations.

3. Partnerships

The NWWN is a network of partnerships which are essential to innovation and problem solving for working waterfronts. Important topics brought up during this breakout discussion included:

- Successful partnerships to address working waterfront issues include a diversity of entities such as non-profit organizations, academic institutions, private business, and local/regional and government agencies.
- Cultivating and maintaining partnerships requires time and dedication.
- Developing the right partnership can add to your team and synergies. They can provide meaningful feedback from various perspectives and act as a supportive network.
- Other organizations can promote the NWWN to waterfront businesses as a supportive network of partnerships.

4. Climate Resilience

When considering climate resilience for working waterfronts, options are complicated given factors such as the need to access water for operations, the environmental impacts stemming from flooding at industrial sites, and the critical economic roles that working waterfronts play. Highlights from this breakout group include:

- Properties within working waterfronts are often owned by many different users, making it difficult to coordinate and fund regional resilience strategies.
- It can be difficult to get people to focus on the resilience of port areas, especially when there seems to be a continued disconnect between the impacts of climate change and the ways in which development is planned and permitted.
- When port areas are flooded, contamination may spread well beyond the local area, creating issues such as beach closures and impacts to fish and shellfish.
- Funding resilience measures is a major challenge. More is needed to secure state and federal funding. When private developers are required to pay for resilience projects on their own it creates a parcel-by-parcel approach and advantages those who can afford to fund the necessary work.
- Some of the tools that planners are using to address climate impacts are outdated. The FEMA maps, for example, are not forward-looking and do not facilitate proactive planning.
- More is needed to educate the public about the impacts of climate change so that people can be aware of and involved in planning efforts. An informed public might also provide an opportunity to generate accountability for those making the decisions and may help foster political will needed to take action.
- Climate change is impacting fish stocks. Habitats–and therefore productive fishing grounds–are shifting, requiring changes in management and regulations. More research is needed to understand the shifts, and more support is required for impacted fisheries.
- As part of working waterfront climate resilience planning, waterfront operations need to explore how they can reduce their environmental impacts such as lowering their emissions.

- When addressing climate resilience for working waterfronts, it is useful to have trusted advocates who are informed and know how to communicate effectively.
- Improved coordination between federal efforts and state/municipal needs could yield more proactive, future-looking planning that is tailored to specific areas and takes into consideration impacts on adjacent uses, economies, and other local factors.
- Participants would like to see examples of planning efforts (e.g., port master plans, municipal harbor/waterways plans), vulnerability studies, and other processes implemented.

5. Public Access

Insufficient public access to/around working waterfronts is an issue that many coastal communities across the United States face. Important topics brought up during this breakout session included:

- Public access can result in conflicting uses when access points along working waterfronts interfere with industry. .
- Working waterfronts can create barriers for neighboring communities to access the waterfront. This is especially important in urban areas where the communities around working waterfront operations may be environmental justice communities.
- Outreach can be used to educate people about safe public access and clarify why some industrial areas may be unsafe or in conflict with public access points. This can include utilizing signage and mapping of areas.
- Providing safe public access can help residents and visitors understand the operations and importance of working waterfronts.
- Affordable housing often is located within industrial areas and therefore there is a lack of access to the water.
- As part of comprehensive port planning, it is important to map state and federal land within ports to develop access points.

6. Communication

Sharing information about working waterfronts is important for a variety of reasons including preserving access for water-dependent activities, engaging new members of the workforce, and securing funding for infrastructure and other improvements. Topics brought up during this breakout session included:

- Creating and implementing communication tools and strategies can be difficult – especially for individuals and smaller organizations who do not have capacity in-house or who do not prioritize communications in their work.
- There is a benefit to engaging communication experts, but those experts must be familiar with the local issues and audiences.
- Social media provides an opportunity for communication–especially to younger audiences–but attendees noted that they lacked training, resources, and expertise to effectively use social media strategies like hashtags and tagging specific people and organizations.
- “Influencers” can be used to help elevate awareness of working waterfront topics. Choosing trusted members of the community can be especially useful for disseminating messages effectively. Woods Hole Sea Grant and Oceana are both working with influencers but this can be expensive.
- Developing and implementing effective communications can be costly, especially when strategies include activities like campaigns and videos.
- NWWN members would benefit from case studies, training, and examples-including costs. Some training may need to be more localized to be useful.

- Examples of communications campaigns include Oceana's National Business Coalition for the Oceans; Island Institute's podcasts, and various organizations' newsletters.
- It is important to also find ways to reach people that do not involve online communications (e.g., social media, emails, and websites). Some examples include the Pier Host Program in Chatham, MA where the Cape Cod Commercial Fishermen's Alliance pays fishermen to stand on the observation deck at the Chatham Fish Pier at designated times and talk to people about commercial fishing activities while the boats are unloading as a way to educate tourists and other people working on the water; The First Coast is a mobile studio/exhibition space that engages Maine coastal residents about their community's working maritime identity and then presents these stories in an exhibit; Oceana worked with a media company in Florida that creates boat billboards, which then were mounted on small skiffs that drove around the harbor; Massachusetts is considering how radio might be an effective tool for reaching industry members who might be listening while on their boats.
- When conducting communications work, it is important to find ways to evaluate the impacts.
- NWWN members expressed an interest in sharing best practices, including information about how to use social media effectively, how to evaluate communications efforts, how to develop content, and how to identify communications needs and opportunities.

7. Permitting and Regulations

Working waterfronts are often subject to a wide variety of regulations pertaining to their land uses and operations. Among the issues discussed at the conference were:

- Current regulations make it challenging for working waterfronts to respond to increased flooding. Some resilience strategies require work in the intertidal and subtidal areas, and permitting can be difficult. Other regulations require elevating structures in floodplains, though some water-dependent uses require ground-level structures (e.g., for the loading and unloading of fish). Efforts to understand the needs and opportunities for new regulations should take into consideration future conditions and be proactive.
- Public access to working waterfronts is important but must be balanced with safety concerns. Regulations should reflect that need for balance.
- When considering regulatory changes, it is important to engage a wide variety of perspectives (e.g., state, federal, local, environmental justice communities, industries) to understand the historical context and current and future needs.
- Some brownfields present an opportunity for conversion to working waterfront uses such as staging areas for offshore wind activities given their limited capacity for other types of development. These sites should be identified and analyzed to determine their potential
- Working waterfronts may be subject to environmental regulations that interfere with their establishment and operation. For example, in some states land owners are prohibited from clearing vegetation within a certain distance from the shoreline. Many working waterfronts, however, require a cleared area in order to access the water. Additionally, regulations prohibiting the use of fill can impede the creation of a shoreline capable of supporting water-dependent uses and can impact resilience strategies. Regulations such as these are important but can impede the establishment of new water-dependent uses–even where such uses occurred previously.
- Regulations should reflect the needs presented by emerging industries such as offshore renewable energy. Permitting challenges can be a barrier to new operations.

- Public perception of working waterfronts is not always positive. In some cases, there are concerns about public health and pollution. The US EPA has worked with communities to review waterfront operations to ensure that businesses have the required permits and that industries were complying with those permits (see https://www.epa.gov/community-port-collaboration)
- Prior to Hurricane Katrina, casinos in Mississippi were required to operate on floating barges. Many were damaged or destroyed by Katrina, and the state did not want to lose the tax revenue by having the casinos not reopen or move out of state. A new law was passed to allow casinos to move inland and build on land close to the waterfront resulting in changes to the character of the coast and the size of the casinos
- Regulations allowing for the installation of solar panels in strategic locations might help working waterfronts remain operational after large storms.
- Floating barges present an opportunity to allow for water-dependent uses in a way that accommodates rising seas, however some states limit the types of activities on floating barges and/or the location of floating barges (e.g., not in areas where the barge would be on dry land during low tide). Pile-supported barges are an option in some locations but can be costly to build and maintain.
- Challenges with obtaining permits can impact the funding for projects when funders are seeking shovel-ready projects.
- Pilot projects may be useful as a way to gather data and inform regulatory and permit reforms.
- Case studies of regulatory and permit-related barriers and innovative regulations and permits can be useful for making advancements (e.g., the ways in which permit exemptions can be made through a public process).

8. Data

Collecting and sharing data is a useful tool in understanding the economic and social benefits of working waterfronts along with helping to understand the potential environmental issues that may impact them. Important aspects of data management and sharing that came up in this discussion were:

- Identifying ways to making sharing data meaningful and useful
- Collecting and analyzing data from commercial fisheries such as catch and yield is demanding and time consuming.
- The Fisheries Knowledge Trust was implemented in the Northeast where data is collected by commercial fishing vessel captains and they decide whether or not to release the data.
- Sharing data can provide help in understanding locally relevant information to municipalities.
- The NWWN can help to collect info on data resources and share with the larger community of working waterfronts.
- Businesses confidentially can lead to paucity of data.

FIELD TRIPS

Prior to the start of the conference and on the second day, participants took part in several field trips in and around Boston to experience firsthand examples of local working waterfronts.

Provincetown, MA

Located at the eastern tip of Cape Cod, Provincetown is one of the world's natural deep harbors. This trip's first stop was a tour of MacMillan Pier, Provincetown's major transportation hub including the Provincetown Marina. Participants also toured the Center for Coastal Studies research facility to learn about ongoing research initiatives

New Bedford, MA

The Port of New Bedford has been America's #1 fishing port by value of seafood landed for the past 20 consecutive years. Participants had a chance to walk around the port with a guide from NOAA, visit the Buzzards Bay Coalition and the Marine Commerce Terminal to learn about the proposed offshore wind farm. Additionally, a stop was made in Fairhaven for a tour of the hurricane barrier.

Island Creek Oyster Farm Duxbury, MA

Located on a mudflat in Duxbury Bay, Island Creek distributes and sells oysters to over 100 farms. Participants received a private tour of the hatchery along with a boat tour of their oyster farms on Duxbury Bay.

Boston Harbor Now Working Port Cruise

Participants enjoyed a three-hour narrated cruise of Designated Port Areas (DPAs) in South Boston, East Boston, Chelsea Creek, and the Mystic River. A wide variety of speakers from government and industry were on board to discuss the Boston waterfront's historic redevelopment boom and the industrial and economic pressures on the harbor.

Red's Best

Located at the Boston Fish Pier, Red's Best supports local fishing communities by providing a way for consumers to have direct access to fresh seafood. Participants met founder, Jared Auerbach, and were taken on an extensive tour of the facility and the surrounding pier.

City of Quincy, MA

Quincy is located just south of Boston with over 27 miles of coastline. This trip included a guided tour of the Fore River Shipyard, which was once one of the country's largest shipbuilding enterprises. Participants also embarked on a private tour of the U.S. Naval Shipbuilding Museum and the USS Salem, which resides in the shipyard.

City of Chelsea, MA

The city of Chelsea is home to one of the ten Massachusetts Designated Port Areas (DPAs). Participants visited the DPA along with a tour of P.O.R.T Park, once a 13 gallon oil tank farm converted into a multi-use waterfront, and Eastern Salt Company's adjacent road salt terminal.

MassCEC Wind Technology Testing Center (WTTC) and Boston Harbor Shipyard

The MassCEC WTTC is the largest wind turbine testing facility in the nation and.offers a full suite of certification tests for turbine blade sections up to 90 meters in length. Participants toured the facility and got a firsthand look at how the WTTC conducts turbine testing. The next stop was a tour of the Boston Harbor Shipyard and Marina, zoned in the East Boston DPA with deep water access to over 1,500 feet of commercial fishing pier berthing.

KEY THEMES

The theme of the 2022 conference was *"Working Waterfronts: Traditions and Transistions."* Through plenaries, presentations, panel discussions, field trips, and informal conversations, participants shared the challenges and solutions facing their communities and industries. They discussed their latest research findings and their hopes for the coming generations of waterfront users.

This document pulls together the major takeaways from the four-day conference, gathered into five categories. Each category includes a distillation of current challenges facing working waterfronts and communities, along with some opportuntiies for growth and solution-seeking.

COVID-RELATED IMPACTS, INNOVATIONS, AND RECOVERY

The COVID-19 pandemic resulted in many challenges for working waterfronts and coastal communities. Commercial fishing, seafood markets, tourism and other industries relying on the waterfront and consumer demands struggled amid lock-downs and other restrictions. However, through their challenges, many developed new ways to expand their business and increase success while also becoming more connected to their local communities.

CURRENT CHALLENGES

- ***During the COVID-19 pandemic many commercial fishermen struggled to sell their catch due to a decrease in demand.*** Lock-downs and restrictions on gatherings resulted in restaurant closures and disruptions in the supply chain of seafood markets. Historically, in Massachusetts greater than 70% of seafood caught locally was purchased by restaurants. Small boat fishermen in Cape Cod were struggling to stay on the water as restaurants in the area were forced to close. Similarly, fishermen in San Diego no longer had buyers to sell to nor did they have infrastructure in place to export their fish for sale elsewhere. The lack of demand for fresh seafood from restaurants and wholesale dealers posed a challenge for fishermen whose livelihoods depended on it. Many fishermen possessed skills and experience for a career in commercial fishing, which made pivoting to something new not always an option.
- ***Restrictions on gatherings and restaurants made it difficult for the tourism industry in many coastal communities to thrive.*** The restrictions on travel and encouragement to stay home reduced the amount of people traveling and visiting new areas which subsequently decreased the amount of new customers for retail, the service industry, and other marine tourism. In addition, as communities tried to reopen there was a shortage of staff as those who had to be let go found employment elsewhere.

OPPORTUNITIES

- ***Many fishermen and traditional wholesale seafood dealers pivoted to a retail framework through direct sales to consumers.*** Selling fish to seafood suppliers, restaurants and markets was no longer a viable option during the pandemic. Massachusetts issued over 300 retail boat permits in 2020 (they issue approximately 100 permits in a normal year) to allow fishermen to sell their catch directly from the docks. The San Diego Fishermen's Working group also began selling directly to consumers at the docks and also expanded the Tuna Harbor Dockside Market to allow for online ordering and curbside pick up.
- ***To keep commercial fishermen and seafood processors in business, fisheries discovered new ways to utilize catch.*** To assist commercial fishermen in Cape Cod, The Cape Cod Fishermen's Alliance chose a low-value but plentiful fish stock, snapper haddock, and increased its demand through the creation

of haddock chowder. They developed a supply chain for the new product by finding a seafood processor, chowder chef, and distributors. They employed this same model to other bountiful fish to diversify the catch for commercial fishermen and have been approached by major food companies interested in developing a shelf-stable product. Fish to Families, a meal distribution program in San Diego, strived to provide seafood as the main protein in a complete meal to people in need that did not have easy access to fresh seafood. The chefs involved in the program were trained in seafood preparation, which allowed the program to purchase the whole fish directly from fishermen to then prepare and distribute to the public.

- ***The need to pivot to new products for both commercial fishing and tourism industries created new opportunities for businesses as well as new skills for employees***. Georgia Sea Grant provided fishermen with a new option for work through their Trawl to Trash program. Fishermen sewed marie debris bags out of shrimp nets and were paid commission on each bag. The program, which is still ongoing, provides fishermen with new skills and also helps to reduce the amount of marine debris by reusing recycled shrimp trawl nets. Maine Sea Grant utilized COVID-19 rapid response funding to create Buoy Maine pitch competitions to support Maine's working waterfront. The competitions helped to foster new partnerships, new research and product development, and created new sources of revenue and workforce opportunities for coastal communities. National Sea Grant used rapid response funding to support tourism and charter boat industries, local fishermen, and coastal stakeholders. The results were online marketing resources for tourism industries, marketing assistance for fishermen through seafood trails (and CSAs), and purchase of aquacultured oysters for restoration efforts. Maine also revamped their Maine Oyster Trail in response to the pandemic through new interactive and virtual tools to connect visitors to farm tours, shucking events, and purchasing opportunities directly from aquaculture farms.

COMMERCIAL FISHERIES AND AQUACULTURE

Commercial fishing activity along our nation's working waterfronts takes many shapes and forms, from a single dock providing access for a small but thriving fleet to a large waterfront complex of docks, upland processors, retail outlets, and support services. Increasingly, working waterfronts are also supporting aquaculture operations including finfish and shellfish as well as kelp.

CURRENT CHALLENGES

- ***Commercial fishing often exists in working waterfronts along with other uses such as recreational boating, ferries, residential developments, and eco-tours.*** With many activities in one space, it can be challenging for waterfront managers to create balance and set priorities. The noises and smells associated with commercial fishing can be unwelcome on sites adjacent to tourism activities or residential areas. Competition for space can lead to the displacement of a use or unsafe conditions. Though there may be some synergies, new uses, such as offshore energy and blue technology have the potential to create additional pressures on waterfronts.

- ***Seafood sales and marketing efforts encounter obstacles*** including how to highlight the sustainability of US-based fisheries, how to entice people to consume under-utilized species, how to reach new consumers, and how to compete with imported seafood. The COVID pandemic created additional challenges for seafood sales when restaurants closed and international commerce was interrupted.

- ***The impacts of climate change are being felt in the commercial fishing industry.*** Waterfronts are flooding. Storm surges are damaging boats and docks. Target species' habitats are shifting. These impacts lead to the need for costly recovery operations, displacement, and transitions to new fisheries.

- ***Commercial fisheries require safe and***

reliable infrastructure in order to operate. Many harbors are in need of dredging to eliminate safety hazards and allow access that is not tidally-dependent; however, dredging is expensive and securing permits can be difficult. Aging and/or lacking infrastructure such as hoists, piers, and dock space can limit fishing activity.

- ***Fisheries around the country are experiencing a "graying of the fleet".*** Training requirements, financial hurdles, societal pressures (e.g., young people feel pressured to go to college after high school, as opposed to entering the workforce or a trades school), regulations, and access are among the contributing factors.

OPPORTUNITIES

- ***In order to maintain and build sustainable fishing communities, several data gaps should be addressed.*** Understanding the infrastructure and access challenges for commercial fishing can help direct investments and inform planning processes. Quantifying the economic and cultural value of commercial fishing can elevate the role of working waterfronts in the decision-making process. Evaluating the efficacy of programs, regulations, and other management strategies can lead to improvements. Many of the research gaps are transdisciplinary in nature and will require a diverse team of people to address them.

- ***Communicating the importance of commercial fishing activity is critical to maintaining sustainable fishing communities.*** A number of resources currently exist to help tell the stories of working waterfronts. Economic data gathered by NOAA, state entities, and others can be used to demonstrate the economic significance of the industry locally, state-wide, regionally, and nationally. Programs such as "meet the fleet" events, dock-side tours, seafood festivals, and art exhibits can increase visibility and appreciation of the industry and may encourage people to consider related career paths. Coordinated efforts to raise awareness among elected officials can help direct important funding, planning, and regulatory revisions to support fishing communities.

- ***As the average age of commercial fishermen rises, efforts are underway to bring new people into the industry.*** A variety of training programs engage youth in activities that introduce them to marine-related fields, including fishing. Other programs give new fishermen the experience they need in order to land jobs on vessels. Some programs provide resources to overcome financial barriers, such as funding the purchase of gear and assisting new fishermen with securing permits. A number of programs focus on exposing under-represented populations to the field of fishing in an effort to diversify the industry.

- ***Climate mitigation within many aspects of commercial fishing is gaining momentum.*** Transitioning vessels to more energy efficient designs and increasing use of renewable energy to power vessels can help reduce a fleet's greenhouse gas emissions, however the pace of change can be slow and strategies are needed to share new technologies with fishermen. Shoreside efforts to reduce the industry's climate impacts also exist. Consistent with the "eat local" movement, promoting local seafood and making it accessible can help reduce the carbon footprint associated with transporting food. Further, using renewable energy to power different aspects of the seafood system, from trucks to processing facilities to lights on docks, can reduce the industry's climate impacts.

- ***Commercial fishing requires safe and affordable access to the water.*** Efforts to plan for and secure–through acquisition, zoning, dedicated parking and berthing, and other strategies–physical space along working

waterfronts are fundamental to preventing the displacement of commercial fishing operations. Access to fishing grounds is also important. Regulations, formal agreements among user groups, and other strategies can help minimize on-water issues such as gear conflicts.

WATERFRONT INDUSTRIES AND INFRASTRUCTURE

Today, working waterfronts, small and large, support multiple uses like commercial fishing, ship repair, tourism, trade, transportation, housing, etc. Pressure for continuous development along the waterfront is increasing while the amount of space remains finite. Aging waterfront infrastructure is challenged by climate change and can lead to unsafe working conditions. The increase of new waterfront uses and development is a chance to collaborate and promote resiliency for the future of working waterfronts.

CURRENT CHALLENGES

- ***Many waterfront industries share the same issue of impaired infrastructure.*** Waterfront infrastructure is impacted by its location along the shore by factors that include shifting shorelines, sea level rise, coastal flooding, and saltwater intrusion. Climate change will only exacerbate these issues in many places, resulting in increased maintenance. Construction of new infrastructure can be costly and overlapping jurisdictions and land use policies can create conflicts. Furthermore, infrastructure standards have changed over time and trying to build new construction that is useful while also reducing impacts on the environment, especially fragile coastal zones, is challenging.
- ***Many working waterfronts struggle to provide access, both for industry and public uses.*** In municipalities public access challenges arise when land becomes privatized and reduces shore access for the public. In addition, this privatization of property and docking for recreating in harbors and port areas reduces the capacity for public docks that allow for traditional waterfront activities to take place. Within large maritime ports, public access is a major issue as well. Many people living around a large port are unaware of its operations or that it even exists due to limited public access. This can lead to misunderstandings of seaport operations and the economic impacts they have on waterfront communities.
- ***Working waterfronts support a variety of potentially competing operations*** such as commercial fishing, seafood processing, shipbuilding, passenger water transport, import/export of goods, and recreational activities. Today, many traditional small-parcel working waterfronts are going through transitions as traditional water-dependent operations have decreased in size and find themselves competing with developmental pressure for other land uses, such as high-end residential property and tourism destinations. Additionally, as climate change accelerates many states are looking to renewable energy to mitigate impacts and decarbonize their energy source. Integrating offshore wind and residential property into working waterfronts is complex as it requires a great deal of space and management in areas that may already be facing challenges maintaining traditional waterfront activities.

OPPORTUNITIES

- ***Traditional working waterfronts continue to be developed for new industries and recreation.*** With the increased interest in offshore wind development, tourism and demand for waterfront property, coastal regions must learn how to balance new and existing operations. Research on working waterfronts in transition can be of help to waterfront industries in other regions learning to coexist. This could include best practices for improving space intended for multiple uses and how to engage stakeholders in the decision making for future waterfront planning.
- ***In an effort to maintain working waterfronts, increasing public access***

can be an added benefit for industry, community, and ecosystems. Allowing residents and visitors the ability to explore the waterfront can help create awareness on the importance of waterfront operations. Additionally, providing access for people to recreate in nature helps people feel connected to the environment and develop respect for the delicacy of natural ecosystems.

- ***Waterfront industries and infrastructure are already experiencing the effects of climate change.*** As waterfronts transform and add new uses this creates an opportunity for addressing climate resilience when planning for future developments. New infrastructure and waterfront planning should take into consideration the changing shoreline, sea level rise, coastal inundation and increased storm intensity. Planning efforts should address such hazards and utilize best practices for adapting to or mitigating climate change impacts.

CLIMATE CHANGE RESILIENCE

Climate change is impacting coastal communities across the United States. Many waterfront industries depend on the ocean and thus understand the need for action to mitigate and adapt to the challenges such as sea level rise, warming seas, and intense storms. Planning for future resilience involves effective communication of the current data on climate change and collaboration with all users of the waterfront.

CURRENT CHALLENGES

- ***Regulatory inflexibility and/or complexity can slow resilience efforts.*** There is a need for updated regulations and coordination among agencies, and flexibility is important to adapt to changing conditions.
- ***Balancing needs and unintended consequences of multi-uses can be difficult.*** Waterfront resilience projects need to balance different types of uses and their needs. Additionally, projects need to consider whether improving resilience in an area will lead to gentrification of that space and provide less help to the group or community initially targeted for assistance.
- ***Working waterfronts are facing uncertainty and nonlinear changes of the future.*** We do not know exactly what will happen, which makes planning and decision-making challenging. Plans must account for current and future threats while also incorporating flexibility to address unforeseen changes. Both the coast and the Great Lakes are experiencing changing water levels, but these vary widely in different places. The Great Lakes may ultimately experience water level decreases but are currently dealing with record-high water levels. Sea level rise also differs in different parts of the country. It is hard to prepare infrastructure for these changes and there are no one-size-fits-all solutions. Additionally, waterfront infrastructure is expensive to maintain, often old, and needs substantial investment to prepare it for the future.
- ***Scientists and decision makers need to communicate clearly in ways people understand.*** Effective communication needs to address local differences and identify local priorities. It also requires building trust in communities.

OPPORTUNITIES

- ***There is a need and an opportunity for increased collaboration to address waterfront resilience across many scales***, including communities, non-profits, local, regional, state, and federal governments, academia, industry, and others. Collaborations can build trust among diverse groups and help identify equitable solutions.
- ***New technology can support working waterfront development.*** New technologies such as renewable energy provide educational, research, and job opportunities in coastal communities. They support working waterfronts

and can help address the global climate crisis.

- ***Communicating and learning from past efforts can help with future efforts.*** Communication is critical to help identify and celebrate resilience successes, and also to learn from efforts that were less successful. Providing opportunities for communities to learn from one another is critical.
- ***Factual and effective communication is essential for helping people understand the threats that we are facing.*** It is important to tailor communication to the audience and include diverse community members who may not always participate. Increased collaboration will help. Additionally, as climate change impacts more people, it becomes easier to understand.
- ***Adapting to climate change is an opportunity to reinvent working waterfronts so they are resilient and work for as many people as possible.*** Resilience practitioners should take advantage of opportunities that come up, even if they are small. Also, new developments can be designed based on previous efforts to support local communities as much as possible.

MARITIME COMMUNITY, CULTURE, AND HERITAGE

Throughout the symposium, a series of sessions addressed maritime community heritage and culture. Maritime communities face issues of competing uses for space, preserving their history in the face of new commercial developments, and increasing the future workforce.

CURRENT CHALLENGES

- ***The demands of new and traditional waterfront uses must be balanced in terms of planning for the sustainability and resilience of working waterfronts.*** Waterfront areas across the country face challenges in balancing new and emerging waterfront uses, including offshore wind, with the needs of existing uses, including commercial fishing. The commercial seafood industry is impacted by a variety of changes to the waterfront, including pressures from new and emerging uses (residential, commercial, industrial) as well as climate change.
- ***Small-parcel traditional working waterfronts are challenged to balance the pressures of today's technological changes, globalization and just in time logistics***. These pressures have encouraged many traditional industries to consolidate to fewer, larger waterfront sites and have pushed some traditional waterfront industries inland.
- ***Marine industries face workforce development issues, such as graying of the fleet and barriers to entry*** (e.g., most lobstermen were born into lobstering families). There is a need for expansion of marine related opportunities in technical schools. In Massachusetts alone, there are more than 3,000 students waiting to get into technical schools.
- ***Regulations and preservation actions have to be coordinated.*** For example, the Maine Oyster Trail could not be launched until passage of a 2014 state law that allowed direct sales to the public. Green infrastructure enhancement can increase resilience to climate change, but those projects can require the creation of land or addition of fill, which is generally not allowed due to restrictions at the federal, state, and municipal levels.
- ***COVID required many working waterfronts to pivot to alternative models, such as direct seafood sales to the public.*** The Maine Oyster Trail was well positioned to take advantage of this trend. San Diego's Tuna Dockside Market established relationships with regional food banks and community foundations, trained young chefs, and developed plans for a fisherman-run cold storage facility to better enable direct consumer sales. The UMass seafood internship program helped the Massachusetts

Lobstermen's Association explore opportunities to promote local lobsters during the pandemic. In addition, at the national level Sea Grant redirected FY2020 funding to support rapid response efforts, including increased access to aquaculture products for consumers via CSA-style direct sales efforts, localized farm-to-table programs, and seafood trails to highlight local producers.

OPPORTUNITIES

- ***Working waterfront communities are balancing traditional industries and emerging waterfront uses.*** Salem, MA used a coal fired power plant conversion to support construction and assembly of offshore wind turbines. New Bedford, MA is building on its strength in fisheries to promote economic development via ocean clusters, while accommodating offshore wind turbine construction on their waterfront. Norwalk, CT is using a comprehensive plan zoning update to consider the needs of commercial marine activities and build upon historic maritime activities. Gloucester, MA is considering how its infrastructure must adapt to meet the needs of its fishing community and other uses, including the needs of emerging technologies, such as marine research.

- ***Coastal tourism and maritime heritage can be economic development tools to bolster working waterfront and marine-related industries.*** Successful examples highlighted include the Maine Oyster Trail, the Mississippi Gulf Coast National Heritage Area, and the Lake Erie Shipwreck Trail. These initiates are also utilizing social media to promote working waterfront activities. For example, the Maine Oyster Trail established an online platform (mobile app) to connect visitors to farmers, and utilized social media to promote the trail. The platform allowed visitors to check-in online, earn swag at various farms, and utilize social media to promote the experience.

- ***Quantifying the value of the local working waterfront is critical.*** Communities, including Dartmouth, MA; Bayou La Batre, AL; and Jonesport/Beale, ME; are quantifying their waterfront economy and using this data to apply for infrastructure and economic development grants, recruit new businesses, and update comprehensive plans.

- ***Workforce development internship programs can get young people engaged with the waterfront.*** As part of a grant from the Walton Family Foundation, the NWWN developed a graduate student internship program addressing real-world issues identified by seafood industry partners. The Massachusetts Marine Trades Association (representing the recreational fishing industry) works with technical schools on marine training programs, provides scholarships and funding to students for tools, and provides funding to assist recreational boating businesses with offsetting the costs of training. California launched the California Commercial Fishing Apprenticeship program in 2020, providing young people with 1000 hours of study and 1000 hours on board a boat fishing with mentors. A Sea Grant partnership (NC, SC, GA, FL) developed a Guide to Fishermen Training resources in the region.

- ***The Young Fishermen's Development Act, passed in December 2020, recognized the need for training activities*** for the longevity of fisheries and established a national program dedicated to training and assisting the next generation of commercial fishermen. National Sea Grant has awarded scoping grants to 11 state Sea Grant programs and local partners to support "Food from the Sea" career development programs and develop planning frameworks based on regional training needs.

Links to current initiatives cited in "Key Themes" (in order of mention):

- Trawl to Trash
- Buoy Maine
- Maine Oyster Trail
- Mississippi Gulf Coast National Heritage Area
- Lake Erie Shipwreck Trail
- California Commercial Fishing Ship Program

FINAL THOUGHTS

The National Working Waterfronts and Waterways Conference has always been an important feature of the NWWN, and that could not have been more evident than it was in 2022. After two years of remote meetings due to COVID-19, it was wonderful to gather in-person again to share lessons learned and best practices focused on the theme of "Traditions and Traditions" in working waterfronts. The conference also served as a call to action. Our nation's working waterfronts are drivers of economies and communities, yet so many struggle with impacts related to climate change, workforcement needs, aging infrastructure, and competing uses for waterfront space. We are doing good work, but clearly there is more to be done!

During the conference, attendees identified many ways that the NWWN can continue to facilitate the exchange of information on key topics such as climate resilience, workforce development, and public engagement. We took a lot of great notes with the help of our amazing volunteers, and will work to transform your suggestions into actions. To be effective though, we encourage you to stay engaged! The best way to do that is to join the NWWN listserv by sending a blank email to **sympa@vims.edu.** In the subject line of that email, type in **"subscribe NWWN Firstname Lastname" insert your own first and last name).** You can use the listserv to share updates, ask questions, and stay up to date on NWWN webinars, podcasts, and other offerings—including the next conference. We hope to see you there!

Be sure to check out the National Working Waterfront Network website to stay up-to-date on current research and events:

www. nationalworkingwaterfronts.com

– Kristin Uiterwyk, Symposium Chair

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