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Humanizing the Seas

A Case for Integrating the Arts and Humanities
into *Ocean Literacy and Stewardship*

CITATION

Engelman, Elysa. 2020. Resilience in the midst of rising waters: Maritime museums face the future. *Parks Stewardship Forum* 36(3): 415–428.

A DOI for this citation is available at:
<https://escholarship.org/uc/psf>

Plastic Catch • Susan Schultz
porcelain and wood sculpture

HUMANIZING THE SEAS

A CASE FOR INTEGRATING THE ARTS AND HUMANITIES INTO OCEAN LITERACY AND STEWARDSHIP

Resilience in the midst of rising waters: Maritime museums face the future

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Mystic Seaport Museum, an outdoor maritime museum on the East Coast, faces the increasingly disruptive impact of sea level rise on its riverfront property, impeding programs, threatening historic structures, and damaging infrastructure such as docks and utilities. In the midst of a global pandemic, maritime sites that practice public history need to increase their resilience to coastal threats by collaborating, being publicly transparent, and demonstrating the relevance of maritime heritage to our present and future.¹

Preface**FRIDAY, DECEMBER 21, 2018: 11 AM**

On an unusually warm first day of winter in eastern Connecticut, Erik Ingmundson stood on a dirt path in water up to his shins, facing a tough decision. As director of interpretation at Mystic Seaport Museum, located in Stonington, Connecticut, Erik knew that nearly 500 people had paid to attend that evening's sold-out 35th Annual Lantern Light Tour, a holiday-themed progressive play in which groups of participants follow lantern-bearing costumed guides who talk and act as if it is Christmas Eve 1876. A family tradition for many, ticketholders looked forward each year to the winter night, walking and riding in horse-drawn wagons to various historic buildings on the museum campus where they dance to live music, nibble on spice cookies, and watch costumed interpreters act out scenes by candlelight. Every ticketholder had been advised to expect that performances would still run in rain or light snow and that the event took place outside, in the dark, over unpaved terrain.

In the past, Erik very rarely had to cancel performances or cut short individual tours, always due to

ice or severe snow. But this year, a heavy overnight rain (too warm to become snow) coupled with an unusually high tide had brought rain coming down from the sky to meet with tidal water coming up through the storm drain. The ground was over-saturated, the standing water 12 inches deep and stretching the entire width of the main path where the tours started and ended every 15 minutes. "This is a lake. I can't do anything about this," he realized. So he made the call to cancel, starting the phone tree to alert the 50-person cast and crew. His colleagues in Communications posted the cancellation notice on the webpage and Visitor Services started the thankless task of calling every ticketed party to offer them a refund or reschedule to one of the few remaining time slots available that season. The local newspaper posted, "Mystic Seaport Museum's Lantern Light Tours scheduled

*"This is a lake.
I can't do anything about this."*

for tonight have been canceled because of flooding on the Museum grounds. Museum staff will contact ticket holders for refunds.”² The museum lost thousands of dollars that night.

TUESDAY, JUNE 25, 2019: 1 PM

Almost exactly six months to the day after the flooded-out Lantern Light Tour, on a sunny, warm summer afternoon, Director of Waterfront Shannon McKenzie stands at nearly the same location on the grass-covered green that is the heart of the museum’s village and demonstration area. She stares at a series of giant puddles, only four inches deep but up to 20 feet in diameter, covering the ground inside a 100x60-foot event tent. In a few hours, 40 vendors from around the Northeast will drive up and start loading in their tables, chairs, and displays for selling boatbuilding tools, supplies, crafts, antiques, and boat-themed collectibles. In two days, the annual Wooden Boat Show will draw more than 10,000 visitors, in addition to the hundreds of vendors, demonstrators, museum staff, and volunteers.

The ground is saturated, thanks again to an overnight rain and a super high tide. There are giant puddles inside the tent, and Shannon needs to get rid of the water—fast! Every year it seems to rain during set-up for the show. Some years she brings in giant fans to evaporate a little water, but that won’t be enough this time. Once she climbed ladders to apply pumps to the top of the sagging tents, laden with water. Today she has tried using push brooms, but the water just rolls back to the low spots. So now she is trying a hand pump, but the puddle is too shallow for it to work effectively.

“We’re a maritime museum,” Shannon later mused, “we’re used to dealing with water. And this is my jam—problem-solving under pressure. But the flooding is happening more and more frequently now.” In the end, it took a combination of digging deeper holes, using push brooms to collect the water, and employing electric pumps and hoses to re-locate the water in order to get the tents dry in time for load-in. “In short,” Shannon recalled, “it

“The flooding is happening more and more frequently now.”



STAFF MEMBERS at Mystic Seaport Museum standing on the flooded village green, winter 2019. Photo courtesy of the author.

took us bilge-pumping out the Village Green like we’d bilge-pump a leaky boat.”

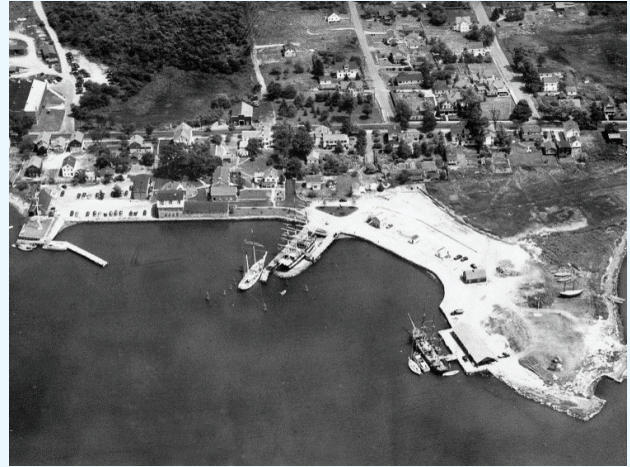
The river

Mystic Seaport Museum’s location and history makes it particularly vulnerable to these issues. The museum is most recognizable for its 19th-century waterfront village, located on the tidal Mystic River, one mile from Long Island Sound. It is a historic site, spanning the area of two 19th-century shipyards, with a tidal marsh between the spit of land where one shipyard stood and the riverfront. All of this has since been filled in. And dozens of historic structures were moved on top to make a maritime “village.” These include a shipsmith, print shop, chapel, tavern, woodcarver shop, apothecary, and general store. Collectively, they are filled with thousands of accessioned artifacts. During a normal summer, hundreds of public history encounters take place on the waterfront, in and around the historic structures: conversations, demonstrations, hands-on and immersive activities, music and theater performances, day camps, concerts, and special ceremonies.

For most of the 18th and 19th centuries, Mystic and its environs were maritime communities. Shipbuilding emerged as the area’s dominant industry by post-Revolutionary times, and by the mid-19th century, ship- and boatyards lined the Mystic River. When the shipbuilding industry declined permanently after World War I, the objects, images, records, and memories of Mystic’s significant maritime past were at risk of being lost. In 1929, three Mystic residents with a shared sea-faring experience founded the Marine Historical Associ-



THE WATERFRONT SITE IN 1942, with a tidal marsh on the future location of the village green. Photo courtesy Mystic Seaport Museum.



THE SITE IN 1949, after the marshy land was filled to make a museum parking lot, which later became the village green. Photo courtesy Mystic Seaport Museum.

ation with a mission to preserve and interpret the region’s and the nation’s maritime material culture and historical memory. In 1973, the Marine Historical Association was renamed Mystic Seaport, later expanded to Mystic Seaport Museum.

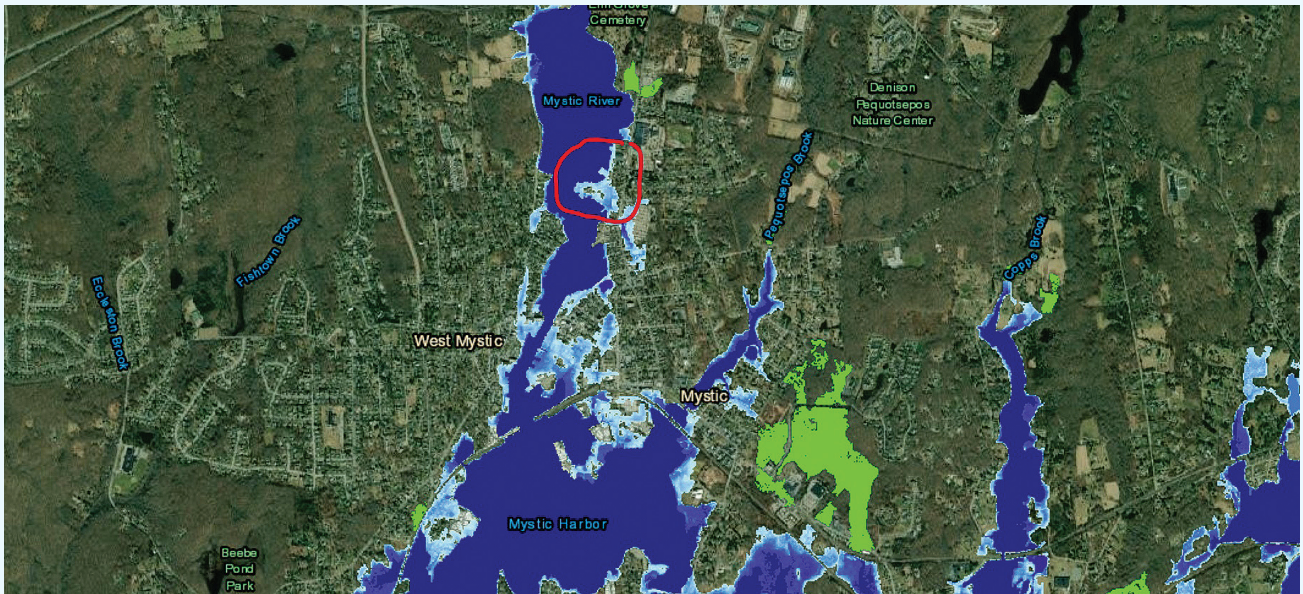
Mystic Seaport Museum is now a leading center for maritime research and experiential education, in addition to being an outdoor living history museum. The museum’s mission is to “inspire an enduring connection to the American maritime experience.” It does this cross-disciplinary work with the core values of knowledge, authenticity, inspiration, stewardship, and community. A nonprofit 501(c)(3) organization, accredited by the American Alliance of Museums, the museum had an annual visitation of 258,000 people in 2019, with an additional 654,863 unique web visitors annually at www.mysticseaport.org.

In the pre-COVID world, on-site humanities staff interpreted the museum’s mission for diverse audiences. Undergraduate and graduate programs, teachers’ institutes, school/youth programming, planetarium lectures, gallery talks, thematic tours, hands-on offerings, and maritime skills demonstrations explained how myriad connections to the water have influenced our nation’s history and culture. In addition to the representative 19th-century New England coastal village, the museum includes more than 500 historic watercraft, a working preservation shipyard, formal exhibition galleries, and a planetarium. The 41,000-sq.-ft. Collections Research Center houses the museum’s collections

in a temperature- and climate-controlled facility while offering physical and electronic access to the museum’s collections for scholars, students, and independent researchers around the world.

As director of exhibits for the past five years and a staff member for the past 15, I have experienced first-hand how the riverfront location, collections, and preservation skills inform all our public programs and exhibits. The museum’s iconic re-created coastal village of historic *in situ* structures, listed on the National Register of Historic Places, is a national treasure. It serves as the setting for interactive demonstrations of maritime skills and trades and the interpretation of the evolution of New England fisheries. This collection of buildings, vessels, and artifacts is increasingly vulnerable to wind and water. In 2019, the site experienced nine extraordinary high tides that brought the water to the level of our lowest bulkheads, which are 5.5 feet high. That is compared with 0–2 times/year in the recent past. When we follow National Oceanic and Atmospheric Administration (NOAA) projections for our area, with the rise in sea level, that number is expected to increase to 60 tidal events per year in a little over 30 years. This involves not just water rising over the docks and bulkheads, but also percolating up through the ground and

In 2019, the site experienced nine extraordinary high tides.



NOAA SEA LEVEL RISE AND COASTAL FLOODING MAP for Mystic, CT, showing in light blue the areas flooded when high tide reaches 4 feet above mean the current high tide. Mystic Seaport Museum is circled in orange. Image courtesy of NOAA.

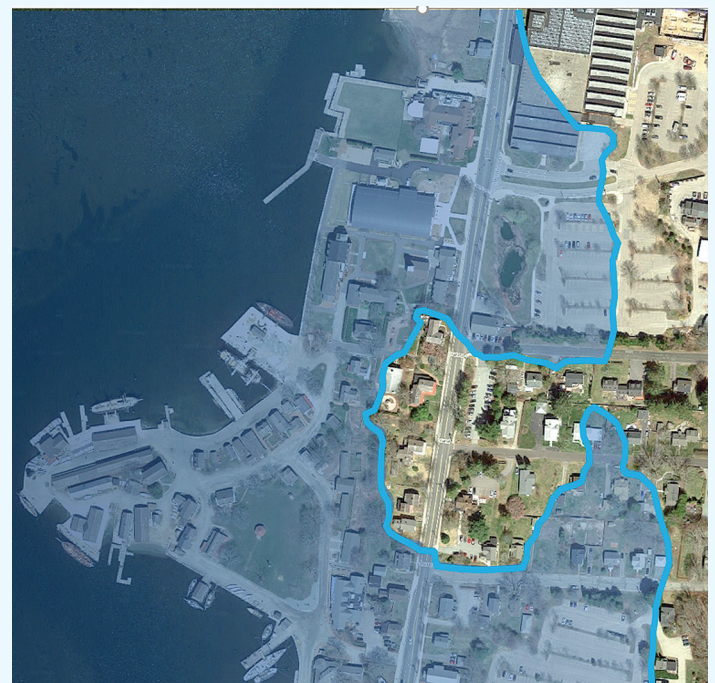
drainage system. Clearly, our location on reclaimed riverfront land leaves the museum vulnerable to increased flooding from climate change. As Mystic Seaport Museum President and CEO Steve White told an internal planning group in 2018 when it first started to face the problem, “We took land from the river decades ago and filled it in to make parking lots and places to move historic buildings. The river wants to reclaim its own.”

Mystic Seaport Museum is not alone. Nearly 600 million people live and work in low-lying coastal areas around the world. New research published in *Scientific Reports* predicts that, worldwide, coastal flooding exacerbated by climate change threatens to cause \$14.2 trillion worth of damage by 2100 to coastal homes, business, and infrastructure. Our location, in the northeastern United States, is projected to be among the areas of the world most heavily impacted by flooding, along with northwest Europe, southeast Asia, and northern Australia. Of the damage to global coastal areas, an estimated 68% will be from tidal and storm events, while the remaining 32% will be due to local sea level rise. And the term “coastal” does not refer narrowly to those of us with oceanfront or riverfront proper-

ty—higher sea levels propel storm surges further inland, up rivers and coves that can be miles from the open water.³

At our site, and at many similar places, sea level rise and coastal flooding do not create a single type of damage, but a tangled web of outcomes that can be divided into three categories of impact to

2013 FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD MAP for the area of Mystic Seaport Museum, designated Zone AE as a high-flood risk area. Blue fill represents a 100-year flood.



*“We took land from the river.
The river wants to reclaim its own.”*

programs, structures, and infrastructure. Within the past year, the museum has begun documenting the damage, studying the projections, and outlining the possible paths for adaptation and preparation for the next 30 years. Along the way, we've begun learning about similar challenges and strategies at other coastal sites. And, we are carefully considering what role a maritime public history site can and should play in raising public awareness about the current state of affairs regarding sea level rise and the future to come.

As seen with the two examples above, the impact on Mystic Seaport Museum programming is the category most visible to visitors and staff. Canceled programs such as the December 2018 Lantern Light Tour not only damage the bottom line from returned fees and expenses but also risk our reputation among disappointed audience members, who might decide to shift their family tradition to an indoor program elsewhere—*The Nutcracker* ballet or a theatrical performance of Dickens' *A Christmas Carol*, perhaps. Likewise, during the height of our summer season, flooding jeopardizes fees generated from dock rentals, boat livery, and special events such as the Wooden Boat Show (canceled this year due to COVID-19, not to flooding). While outdoor sites have always had to plan for rainy day contingencies, the increase in high-tide flooding increases the odds that any special event will be impacted.

Storm surges and coastal flooding have also had a profound impact on museum structures, namely buildings. A decade ago, the 1965 research library building was emptied and demolished in part because of persistent flooding in the basement, which sat just above the water table, only a few hundred feet from the river. The library and manuscript collections and access services were shifted across the street, to higher ground. Other mid-20th-century buildings on the campus have also experienced frequent basement flooding, demanding staff time, energy, and museum resources to remediate. At one point, there was a concerted internal campaign to “get staff up and out of the basements,” shuffling offices and workrooms around campus to get everyone onto the first floor or higher. This, too, took time and energy that could have been spent instead on the actual work of the museum.

The third category of damage caused by regular flooding linked to local sea level rise is the cam-

pus infrastructure: docks, utilities, and internet. The riverfront campus is dotted with more than a dozen docks of all lengths and sizes, some floating and some fixed. Many docks serve to display and provide access to ships and boats in the museum collection. Others are used by large visiting vessels, including in recent years *Mayflower II*, the replica Viking longboat *Draken Harald Harfårga*, and the Polynesian voyaging canoe *Hōkūleʻa II*. Still other docks are used regularly by community members for high school crew practices and regattas, remote controlled boat demonstrations, and by museum visitors who take a sailing class, rent a rowboat, sailboat, or paddleboat by the hour, or take a guided tour of the river on an electric launch. These docks and the bulkheads that keep the grounds from crumbling onto the river have taken a beating during the past decade by increased exposure to water rising underneath, needing more frequent repair and replacement—including the pipes and conduits that run underneath to supply vessels with electrical power and fresh water. Coastal dwellers and Weather Channel aficionados have become used to seeing docks underwater during a hurricane. But Mystic Seaport Museum has experienced water over the docks and past the bulkheads more and more often each year not because of a hurricane or a flood—just the confluence of high tide, full moon, and winter rain storm. Docks were made to sit above the water, not under it.

On the grounds of the museum, but invisible to visitors, electrical, phone, and internet systems lie buried underground, to keep the historic site free from the visual intrusion of modern utilities. When the groundwater level rises, it seeps into the conduit underground or under the docks, corroding the material. Then the utilities in that part of campus go down, impacting educational and business operations. Heavy machinery must be brought in to dig up and replace the cables and conduit. This is not sustainable.

We are not alone in this predicament. Historic sites that are older, larger, and more well-known than ours are also at risk. An analysis of 49 UNESCO

Canceled programs damage the bottom line and risk our reputation.

World Heritage sites along Mediterranean coastal areas revealed that 42 of the 49 heritage sites are currently at risk of coastal erosion, while 37 are at risk from a 100-year flood. By 2100, the flood risk across that region is projected to increase by as much as 50%, with the erosion risk rising by 13%.⁴ These sites include not only Venice and its lagoon, but also other Italian sites such as Ferrara and the Po Delta, archaeological areas of Pompeii, and the historic port of Genoa. Elsewhere in the Mediterranean, at-risk sites include the archaeological site of Carthage, the Old Town of Corfu, and historic areas of Istanbul.

Not all this blue is salty. Historic and cultural sites far from the ocean are also being impacted by water-related issues caused or worsened by the climate crisis, such as increased rainfall, erosion, and warmer temperatures. Think broadly about any place that water and land touch: rivers, lakes, streams, reservoirs. Recent damaging inland waterways events in the US alone include the 2019 floods on the Mississippi and Missouri rivers and dam failures in Michigan in 2020. Although Mystic Seaport Museum is located on the Atlantic Coast, for many years our scope has intentionally included rivers, canals, and freshwater lakes. Our collections, exhibits, and programs have addressed Mississippi River push-boats and barges, Adirondack canoes, and US inland expeditions into the icefields of Antarctica. This wide scope differentiates us from many US maritime museums, which tend to focus on the closest body of water. A broader view gives us greater latitude to connect our local residents and out-of-town visitors to the larger regional, national, and global maritime experiences. In our view, ocean literacy needs to include all waters, even as it recognizes the regional and local differences that water plays in human life.

Every park, historic site, or museum has horror stories about things going wrong in the hours or days before a big event. But for Mystic Seaport Museum—and many other sites near rivers, lakes, or seashores—problems with programs, facilities, and infrastructure caused by water are becoming more

frequent and more difficult to remediate. These problems arrive not just with dramatic events such as hurricanes, but also more frequent higher tides and heavier rains as well. As site managers and program operators, we cannot hide from either sea level rise or from the climate crisis contributing to it—because it brings itself to our docks, buildings, bilge-pumps, and boots more and more often.

This puts maritime heritage sites in a position where they have no choice but to plan and prepare for the future. At the same time, our commitment to public service creates the imperative to do this planning publicly and to model it for others. Historian/Curator Lincoln Paine called out the importance of this work when addressing the International Council of Maritime Museums in a 2015 keynote. He stated, “Maritime museums are especially relevant now because we are uniquely situated to explain the links between human society and environmental change. The first communities to be directly challenged by global warming, ocean acidification, overfishing and solid-waste pollution are those whose history and traditions maritime museums exist to celebrate.”⁵ Experiences at Mystic Seaport and elsewhere show that our maritime museums are not just witnesses to climate change, they’re among the first victims. We have a duty to help lead the charge of adaptation and planning, along with providing a public forum for civil and business leaders, residents, and seasonal visitors to hash-out a response to local threats.

What can be done? We must address all three of the categories of impact: structural, infrastructure, and programming. This crisis, like every other, opens opportunities for shifts in thinking and behavior. Sites across the country and the world are paving the way for responding to sea level rise on historic places and the built environment in ways that are innovative and attention-getting. Many examples demonstrate the benefits of incorporating an ocean ethic recognizing both the local specificity of experience and the interconnected nature of all water.

One rich and useful resource is the 2015 report from the National Park Service, *Coastal Adaptation Strategies: Case Studies*, which includes 24 succinct examples from parks not just on the seaboard, but also on reservoirs, lakes, and stream crossings.⁶ They represent local solutions to coastal problems

Maritime heritage sites have no choice but to prepare for the future.

in places as different as the urban coastline in San Francisco Bay, a lighthouse on Cape Hatteras, a historic island cabin in Yellowstone, shell mounds in Florida, and visitor facilities in Cape Cod, Virginia, and the Everglades. Together these case studies spotlight “innovative and unique solutions” that have been planned and/or implemented “to adapt to climate change in coastal parks.”⁷ The report offers a useful, standard format for describing how each site has faced an ongoing coastal challenge (organized by goals, challenges and needs, responsive actions, and time spent). This standard format makes it a handy reference for those working in other organizations. Each case study also lists the types of adaptation strategies employed. These include the “managed retreat of built infrastructure,” such as the \$12-million, 11-year project to move the Cape Hatteras lighthouse back from the eroding shoreline.⁸ It also includes more mundane but equally vital planning and operations steps, such as “incorporating climate change into policies, plans, and regulations” at Yellowstone National Park.⁹ Many sites such as the Everglades National Park visitor center also address the issue of coastal adaptation through changes to their programs, exhibits, and exterior signage, described as “increasing/improving public awareness, education, and outreach efforts.”¹⁰

Mystic Seaport Museum is just at the beginning of its own project to understand how our site is and will continue to be impacted by sea level rise, how to mitigate or adapt to those changes, and, importantly, how to integrate this topic into our policies and programming. In 2019, Steve White formed three working groups, each co-chaired by a vice president and a department director, with group members including trustees, staff, and outside experts and advisors. One group studied the facilities impact: the structures in greatest danger over the next 30 years, the historic status of each building, and the projected impact of sea level rise on the riverfront campus. A second group is contextualizing this within the local and regional situation, reaching out to planners, policymakers, and scientists to better understand the larger forces at play in the community and the coastal Connecticut/Rhode Island region. The third group, which I co-chaired, focuses on programming. How can we inform visitors of the changes to our site in the short term? How can we plan for future use of a site that faces increasing flood problems? What

do we envision that future visitors in 30 years will want to see, do, and learn at our maritime site?

This work was interrupted by the COVID-19 global pandemic, but enough progress was made to hint at several paths ahead. With a new museum president expected to start before the end of 2020, it is hoped that this important work will continue and regain momentum in the near future. Likely venues for museum action fall into three categories, roughly following the foci of the three working groups: structures, partnerships, and public programs.

Structure, infrastructure, and spatial arrangement

One step toward adapting to sea level rise is to build new structures better. We have already begun that work at Mystic Seaport Museum with the design and construction of the Thompson Exhibition Building, on the former site of the frequently flooded research library. Designed by the Centerbrook architectural firm, it was built in 2016 to stand 12 feet above the 100-year flood level, with hurricane-resistant windows, and a geothermal heating/cooling system. It will serve as the museum storm center in future hurricanes.

But most of our future work with structures will necessarily focus on the historic buildings, especially the largest concentration in the village, which is ironically on the lowest-lying parcel of land. The entire Mystic Seaport Museum campus lies within the Mystic Bridge National Historic District. Many of the exhibit and demonstration buildings are historic Connecticut or southeastern New England structures, built in the 19th century and moved to the site to form a recreated maritime village. Most were collected in the middle decades of the past century and are difficult to heat or staff efficiently, with each on its own foundation, furnace, leaky windows and doors, and poor insulation. The current understanding is that even raising some of the most threatened low-lying buildings would be prohibitively expensive and impractical, requiring installation of ramps and doorways wider than a small shop or historic house was built with so as to be in compliance with the Americans with Dis-

One step toward adapting to sea level rise is to build better.



THE NEW THOMPSON EXHIBITION BUILDING, built in 2016 at an elevated height to sit above the 100 year-flood level.

abilities Act. We know from our ship restoration work that not every vessel can, or should, be saved. As we rethink future plans for maritime themes and spaces relevant to 21st-century audiences, our options would be greatly increased if there could be sensible changes to preservation restrictions on historic buildings or a common shift in collections-care requirements regarding narrow ranges for temperature and humidity. This could enable us to move threatened buildings to higher ground, to re-purpose spaces that were configured for a 1950s society, or perhaps to strategically abandon a few structures for the greater good. The “snapshot in time” that museum visitors see is a false one because the shipbuilding community was always changing and adapting to conditions even in the 19th century. As with any collections, our buildings also deserve to be regularly and responsibly culled as part of the stewardship process. It would be better to do that in a thoughtful and planned way

rather than having sea level rise force our hand in another few decades.

The notion of reorganizing a complex site of multiple structures to accommodate changing water levels and better serve human needs is a daunting idea, but not unprecedented. The city of Rotterdam in the Netherlands is a prime example. City planners there are reportedly re-engineering the city to accommodate the rising water level. Strategies include water plazas that serve as urban parks with basketball courts, benches, skateboarding ramps, and stepped seating for observers during dry weather, which then convert into a storm system of deep pools that waterfall into each other, fed by a gutter system, and shallow basins when it rains. Each of the five Rotterdam water plazas can hold up to 1.7 million liters of excess water. Concepts for the city also include floating homes that will rise and fall as much as 2 meters with the tidal changes.¹¹

What better place than a coastal museum to showcase innovative ideas such as floating homes, mitigation techniques for coastal erosion, or new building materials and methods? Strawberry Banke, a living history museum in Portsmouth, New Hamp-

The “snapshot in time” that museum visitors see is a false one.

shire, has led the way in partnering with its city in a Coastal Resilience Initiative involving the low-lying historic downtown area, where the museum occupies 10 acres. The museum has been publicly open about the king tides that flood basements of many of its 18th- and 19th-century historic buildings and has shared its research and actions online, in professional conferences such as the “History Above Water” convenings, and in popular print and broadcast stories. Last December our Sea-Level Rise Public Programming Working Group at Mystic Seaport Museum spoke with Rodney Rowland, the director of special projects and facilities at Strawberry Banke, to learn how the situation there compared to that in Mystic and to get recommendations on resources and future steps.

Partnerships and networking

Our Zoom conversation with Rowland last winter points to one of the most important paths the museum can and should pursue in the near future: working with existing partners and forging new partnerships to tap into outside expertise in science, policy, education, and the arts. This themed section of *Parks Stewardship Forum* is a prime example of deepening an existing partnership: the authors are affiliated with either the University of Connecticut or Mystic Seaport Museum, which have developed a long-standing memo of understanding that lays out the nature of their institutional partnership. Faculty regularly use the museum campus for field seminars or as topics for capstone maritime studies and American studies courses, students can purchase low-cost annual membership passes and pursue special internships, and the museum staff frequently turn to university faculty to serve as consulting scholars on exhibit and research projects.

In addition, the museum has an even (geographically) closer academic partner in the Williams–Mystic Maritime Studies Program. For more than 40 years the museum has been the only US museum to host a semester-long, residential undergraduate program. This interdisciplinary ocean and coastal studies program integrates the fields of maritime history, literature of the sea, and ocean policy with marine science. Williams College faculty are permanently based in Mystic and use the museum as their learning lab, while students use the museum’s research library as their academic library during the semester. Students perform work-

study jobs at the museum, including conducting research or testing prototype interactives for upcoming exhibits. Many have stayed or returned to work as seasonal or even permanent museum staff. These existing academic networks help museum staff most clearly when working on projects—such as climate change and sea level rise—that stray into disciplines outside of maritime history such as the history of science, public policy, marine science, or literature. Presumably, they will continue to be valuable as the museum works to adapt to a changing environment in ways that are ethically sound, informed by scholarship, and shaped by science.

There is so much important work occurring across the country and around the world on cultural heritage and climate change that there is much we can learn from existing coalitions and clearinghouses, conferences, online material, and published resources such as the National Park Service guide already described. Other important resources that are no doubt familiar to *Parks Stewardship Forum* readers will continue to influence our thinking at Mystic Seaport Museum, including the 2019 ICOMOS (International Council on Monuments and Sites) report on cultural heritage and climate change,¹² the Smithsonian Institution’s 2013 *Roadmap for the Development of a Climate Change Adaptation Plan*,¹³ and the resources shared on the Climate Heritage Network. For coastal maritime museums in particular, the Keeping History Above Water project website provides many resources and links.¹⁴ Clearly, there are tremendous opportunities to connect with other museums and historic sites facing similar issues by listening to each other, sharing ideas, and partnering on grants, audience studies, and public programs.

Programming and public engagement

To what extent should historic sites like Mystic Seaport Museum become visible centers for public engagement around climate change? For so long, science museums have been more prominent in presenting environmental topics and urging changes in human behavior, while art museums have sought to catalyze public thought and discussion

There are tremendous opportunities to connect with other historic sites.

about current social issues. Maritime museums, like other history and heritage organizations, have naturally tended to look backward more than forward. Yet, our current museum vision statement at Mystic Seaport Museum is to “significantly influence how new generations engage with our nation’s past, present, and future,” giving us the mandate to address critical topics such as climate change.

How can we better integrate current topics into our site interpretation and programs? One way would be to highlight examples of our local community’s resilience and adaptation in the past. “Resilience” is a term appearing frequently in the popular press during the past few years, usually to advocate a key character trait for parents to instill their children. If we accept a broader meaning of “resilience” as “the ability of a system to retain control of function and structure despite changing conditions,” then it clearly applies not just to the system of an individual organism like a child, but also to an institution, an industry, or even a community. Elsewhere, Syma Ebbin has analyzed the cooperative management of Pacific Northwest fisheries among tribal, state, and federal governments. She found that the most resilient organizations shared certain common characteristics, including an ethic that promoted stewardship and sustainability, along with successful collaborative relationships with other organizations, and management that is responsive, flexible, and adaptive.¹⁵

Mystic, Connecticut, is a prime example of how resilience can enable a community to survive and thrive, even as it changes over time. Local residents have confronted storms, floods, and coastal erosion beginning with the Native peoples who first summered on the shores of the river thousands of years ago. The community has adapted to other changes as well, converting from an economy grounded in shipbuilding to manufacturing in the late 19th century and then making a profitable turn to tourism in the mid-to-late 20th century. Collaboration between systems has been vital. As with many bodies of water, the Mystic River both divides and links human populations. With the west bank in

the town of Groton and the east bank in the town of Stonington, the local governments and residents have had to work together to manage the watershed and address river-related issues. Telling these stories to our visitors, whether casual sightseers or local community members, will help demonstrate that resilience is part of our heritage, not a new development.

An emphasis on resilience in the face of sea level rise isn’t to dismiss or diminish the accelerated pace of climate change, but to advocate that we can learn lessons from past generations about how to adapt and survive. Finding examples of resilience in the past could inspire innovative thinking and action not only in casual visitors, but also in the current generations of Mystic residents who own homes, operate businesses, and use the same river as previous generations.

Any museum or historic site that has survived as long as Mystic Seaport Museum also has had to develop the same traits in order to survive on an institutional level. Even a cursory look at photographs of the museum from past decades shows its physical and programmatic changes over time: to address generational shifts in visitors from the 1930s to the 2020s, to meet changing regulations, to conform with best practices in the field, and to form influential partnerships with other organizations, such as Williams College and the University of Connecticut. The ethic of stewardship is baked into the museum model; the current challenge is to balance that with economic and physical survival. When we become too attached to any one program, perspective, or even physical structure (such as a ship or building) for too long, and neglect to adapt to a changing environment, we risk losing our resilience. How do we and other heritage and cultural organizations maneuver that narrow channel?

Our plan for this summer was to start with public-facing programming, even as we have more work to do in planning for remediation and adaptation. As late as this May, we intended to experiment with outdoor signage, installing half a dozen interpretive panels with historic photos, charts, and maps, to call attention to the impact of past storm surges, the changes in the depth of the river and shape of the shoreline, and the current recurring flooding. These signs were to be placed around the campus, each with a paragraph of text and a QR

Our vision statement gives us the mandate to address climate change.

code linking to a micro-video giving more information and more historic images. Instead, we adapted the plan and installed a dozen printed signs with QR codes on stanchions, placing them outside closed buildings to enable pandemic visitors to learn more about the demonstrations and information that used to be provided by interpretation staff and volunteers. What we learn from visitor use of this temporary pandemic-driven signage can help us next summer, when we hope to erect more durable signage related to sea level rise.

Art may provide a more enduring option for conveying the seriousness of the threat to our campus visitors. We might take inspiration from the “Waterlicht” installation by Daan Roosegaarde at the United Nations Headquarters in New York City. Banks of LED lights emit undulating waves of blue light at the height of the projected depth of water in the plaza should nothing be done to control sea level rise. The level is above pedestrians’ heads.¹⁶ With a large, open campus featuring many vistas of the river, Mystic Seaport Museum provides exciting opportunities for public sculpture installations to make visible the impact of rising waters on the riverbank and community.

Public historians have the right and the duty to help people face a difficult future by drawing upon the examples of the past. The goals for looking backward in time might include finding warnings, potential solutions, or, at the very least, inspiration in adaptability and resilience. There is an urgent need to link the existing scholarship in environmental justice and environmental history to the “blue humanities” and provide places for this to reach the public in responsible, thought-provoking ways. How can academics in maritime fields entice non-maritime scholars to engage with this important cross-disciplinary work? In public history, many 19th-century living history farms focus on their agrarian past yet ignore or underplay their locations along rivers and lakes, which once connected their sites to larger communities and to economic and social systems more strongly than roads. A combined effort to link studies of the past through maritime and other lenses (agrarian, industrial, urban, technological) can shed new light on our climate in the past and present. For example, in this issue of *Parks Stewardship Forum* Paul O’Pecko describes how important scientific evidence about weather and migration patterns lies hidden in voy-

age logbooks and what that data offered to groundbreaking scientists like Matthew Fontaine Maury. What could come from comparing voyage-based observations with those made by farmers in their journals? How did oceanic storms, seasonal floods, and urban development affect growing seasons on the coast or in the hinterland? How can that be shared with the public at historic sites by staff and volunteers, whether first-person costumed role players, or third-person interpreters and tour guides? Likewise, how can urban sites better use historic water-based disasters such as hurricanes and floods to make visible the legacies of redlining and social injustice in cities such as New York and Miami, where they continue to shape the populations today? Maritime museums such as Mystic Seaport Museum can and should help with that. And in return, maritime museums will themselves find better ways to incorporate science, art, and the social sciences into exhibits and programs, to present current environmental challenges and highlight possible solutions.

Revisiting the Lantern Light Tour

You might be wondering what happened during the Lantern Light Tour production in 2019: did that also flood out, as it did in 2018? There were several remediation steps taken in advance to reduce the impact, including raising the grade in the area most heavily affected, putting a collar on a critical storm drain, and raising the height of the storm pipe on the seawall, all to reduce backflowing during high tide. For the most part, it was better than in 2018, with no performances canceled due to flooding. Still, it was a close call one day, when, after a heavy overnight rain and morning high tide, 8–10 inches of standing water slowly drained away in the hours before the performance, as the tide dropped. As Director of Interpretation Erik Ingmundson said, “Flooding is an ongoing issue. Despite all the remediation, we’re still at the mercy of the tides. The tide has to drop for the drainage to work. If we’re flooded out, we just can’t do anything. This will definitely play a role in our programming plans going forward.”

*“Despite all the remediation,
we’re still at the mercy of the tides.”*



THE ICONIC MARITIME VILLAGE AND MUSEUM VESSELS of Mystic Seaport Museum on a summer day around mid-tide. Courtesy Mystic Seaport Museum.

Conclusion: Climate Crisis and COVID-19

In early March of 2020, I flew home from Washington, DC, after attending the two-day symposium, “Stemming the Tide: Global Strategies for Managing Cultural Resources in a Changing Climate.” Organized by the Smithsonian American Art Museum and the National Collections Program, it featured a range of presenters from ICOMOS (the International Council of Monuments and Sites), a keynote by Kenneth Kimmel of the Union of Concerned Scientists, and others (the presentations, including sign-language interpretation, have since been made available online).¹⁷ My head was spinning, full of ideas from the presentations and breakout sessions. I was energized and eager to share my notes with Mystic Seaport colleagues in preparation for an upcoming working group meeting on sea level rise and site programming.

Within a week, my museum had closed to visitors and my office shifted to home, due to the outbreak of COVID-19 in the Northeast. Within a month, Mystic Seaport Museum had laid off more than half of its staff due to anticipated loss of revenue. The campus would not reopen to staff and visitors

until late May, and even now we are operating at reduced visitor capacity and with a smaller staff due to state and Centers for Disease Control guidelines. For now, this immediate global health crisis must take center stage. There is little bandwidth available for meetings, conferences, or planning efforts to combat future sea level rise when museums and historic sites are fighting for their economic survival. And COVID has altered the current playing field in ways that even a futurist could not have anticipated. With the plummet in air and automobile travel, carbon emissions dropped this spring as well. More and more institutions and audiences have embraced virtual programming. Remote work and distance learning could alter the nature of work, travel, and pollution for generations to come. At the same time, the need for safe food and beverage containment and PPE (personal protective equipment) for an entire population has led to a rise in single-use plastic and increased pollution from disposable masks on the ground and in the water.¹⁸

COVID was like a blast of dynamite under ice: it fractured the seemingly solid pattern of everyday life, lifting huge, jagged slabs. When the slabs fall, they don’t need to fall back into the same places. We have a chance to remake, to address social and economic inequities, and also to shift our attitudes and behavior to ameliorate the climate crisis.

COVID fractured the seemingly solid pattern of everyday life.

COVID has shown us the best and worst of a global crisis. Like climate change, it has disrupted societies, displaced people, and created suffering and loss of life, although its impact has been compressed into months, not years or decades. Climate change is a global disruptor with real, unpredictable, and unequal consequences on economies, politics, and everyday lives. Yet, over the past few months since I returned from that DC symposium, we have also proven our adaptability and resourcefulness as a species. Teachers switched within one week from in-person classroom to Zoom rooms, gin distilleries pivoted to manufacturing hand sanitizer, scientific labs turned toward vaccine research, people hauled out their sewing machines to make masks, and high schools held drive-by graduation ceremonies. Millions of people altered their most basic public behavior: wearing face coverings, practicing social distancing, being cautious about what they touch, finding ways to connect with vulnerable family members through windows and videoconferences. Not everyone adapted to these new habits and new codes of conduct, but many did. Could anyone have thought this was possible a year ago?

It will take the sciences, the arts, and the humanities to “solve” the COVID-19 problem, because it is not just a medical problem: it also involves human behavior. These changes, these alliances, must also inform our future approach to the long-term, though urgent, climate crisis. We have seen that change is possible in a short period of time. We’ve also seen that communities and states are not monolithic, but demand solutions that can be accommodated to their existing needs and culture. There are lessons to learn from this battle against a virus that can inspire and inform the longer fight to “build back better,” in the words of a letter sent to the US Congress. The letter was jointly written by five leading US cultural organizations committed to the power of museums and historic sites to lead in sustainability: the American Association for State and Local History, the Association of Children’s Museums, the New England Museum Association, the California Association of Museums, and the American Alliance of Museums. The seven steps outlined in the letter included one concrete action directly related to maritime museums and sites: “Invest in coastal, riverine, and urban stormwater management infrastructure that accelerates the removal of combined sewage overflow systems at the same time that we restore

natural ecosystems and adaptive infrastructure.” Another speaks more to what maritime museums can give than to what they get: “Mobilize formal and informal education approaches for nationwide climate literacy.”¹⁹

Sea level rise and its impact on our historic sites provides the perfect opportunity to fulfill Lincoln Paine’s argument that maritime museums “must promote themselves as essential cultural institutions with compelling stories of great relevance to a contemporary audience.” And we must “encourage people to see maritime museums not only as destinations for our visitors, but as points of departure for them as well.”²⁰ Maritime museums must adapt—not just physically, but also programmatically—to prepare ourselves and our publics for the coastal changes happening now and those yet to come. We need to practice resilience for our own institutional survival and model it for our communities. In time, Mystic Seaport Museum and other maritime museums could and should become valuable contributors to discussions concerning climate change within their local communities as well as the fields of historic preservation, cultural heritage, and public history.

Endnotes

1. This article is dedicated to the Mystic Seaport leaders past and present who urge us toward greater resilience, including outgoing Mystic Seaport President Steve White and especially recently retired Executive Vice-President/Chief Operating Officer Susan Funk.
2. “Tonight’s Lantern Light Tours at Mystic Seaport Museum Canceled,” *The Day* [New London, CT], December, 21, 2018; <https://www.theday.com/article/20181221/NWSO1/181229894>.
3. E. Kirezci, I.R Young, R. Ranasinghe, et al., “Projections of Global-scale Extreme Sea Levels and Resulting Episodic Coastal Flooding over the 21st Century,” *Scientific Reports* vol. 10, no. 11629 (2020); <https://doi.org/10.1038/s41598-020-67736-6>.
4. Lena Reimann, Athanosios T. Vafeidis, Sally Brown, Jochen Hinkel, and Richard S.J. Tol,

Maritime museums need to practice resilience for our own survival.

- “Mediterranean UNESCO World Heritage at Risk from Coastal Flooding and Erosion Due to Sea-level Rise,” *Nature Communications*, October 16, 2018, 1–11; <https://www.nature.com/articles/s41467-018-06645-9>.
5. Lincoln Paine, “Connecting Past and Present: Maritime Museums and Historical Mission,” *The Mariner’s Mirror: The International Quarterly Journal of the Society for Nautical Research* vol. 102, no. 4 (November 2016): 394.
 6. C.A. Schupp, R.L. Beavers, and M.A. Caffrey, eds., *Coastal Adaptation Strategies: Case Studies, Multiple Property Study 999/129700* (Fort Collins, CO: National Park Service, 2015).
 7. Schupp et al., abstract, 1.
 8. Schupp et al., 21.
 9. Schupp et al., 16.
 10. Schupp et al., 45.
 11. Giovanna Dunmall, “How to Make a City Waterproof,” *The Economist*, June/July 2018, online.
 12. ICOMOS Climate Change and Cultural Heritage Working Group, “The Future of Our Pasts: Engaging Cultural Heritage in Climate Action,” July 1, 2019; <https://indd.adobe.com/view/a9a551e3-3b23-4127-99fd-a7a80d91a29e>.
 13. <https://www.si.edu/Content/Pdf/About/Smithsonian-Institution-Climate-Adaptation-Plan.pdf>.
 14. <https://www.historyabovewater.org>.
 15. Syma A. Ebbin, “Institutional and Ethical Dimensions of Resilience in Fishing Systems: Perspectives from Co-Managed Fisheries in the Pacific Northwest,” *Marine Policy* vol. 33, no. 2 (2009): 264–270; <http://dx.doi.org/10.1016/j.marpol.2008.07.005>.
 16. Dunmall.
 17. The symposium website is <https://americanart.si.edu/research/symposia/2020/stemming-the-tide>. The video playlist is at https://www.youtube.com/playlist?list=PL7gn_68Hr4h-fIGqC-xRM6GnZTkqajDHL.
 18. Jordan Davidson, “COVID-19 Masks Are Polluting Beaches and Oceans,” June 9, 2020; <https://www.ecowatch.com/covid-19-masks-beaches-oceans-2646165717.html?rebelltitem=3#rebelltitem3> (accessed August 27, 2020).
 19. Sarah Sutton, “Nonprofit Cultural Organizations Send Message to Congress”; <https://sustainablemuseums.net/2020/07/20/nonprofit-cultural-institutions-send-message-to-congress/> (accessed August 2, 2020).
 20. Paine, 388–399, quote on 399.