2021

The Salty Commons: Oyster Farmers Forging Socio-Ecosystems on Land & Sea

Julia Noonan

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OYSTER FARMERS FORGING SOCIO-ECOSYSTEMS ON LAND & SEA

Julia Noonan
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American Studies 302: Senior Project

Eve Dunbar
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And Emma, for your extra set of eyes.

PREFACE

Over the summer of 2020, I witnessed firsthand the ingenuity and hard work of Long Island oyster farmers working to bring back the New York oyster and their once globally dominant industry. The following project is born not only out of appreciation for their efforts and the way that participating in this work impacted me, but also a desire to more deeply understand New Suffolk, one of the places I love most. With ten thousand years of human habitation on the East End, both land and water are crowded by people of past and present.

March, April, and May of 2020 were remarkably cold, rainy, and overcast. Perhaps the weather simply reflected the bleak national mood. The coronavirus pandemic flipped American life upside down. While cities shut down across the world, my family relocated from Manhattan to New Suffolk, a small hamlet on the North Fork of Long Island. I spent this spring in the same 100+ year house of my childhood summers. Growing up, Junes, Julys, and Augusts were characterized by art projects, nights of flashlight tag, and days of swimming and reading at Third Street Beach. My mom and I walked down there together with the red wagon full of beach chairs nipping at our heels. From our spot on New Suffolk beach, we looked out towards Robins Island and the dune beyond to North Sea Harbor and Conscience Point. I'd come to appreciate the significance of these places later.

My family casts the North Fork as an idyllic respite from the noise of New York City, but the political-present that brought us there last spring burst this simplified characterization. This place of perpetual summer has a history of its own.

An undeniable air of tension pervaded the neighborhood. Over breakfast, my parents, hugging their devices, read aloud New York Times headlines: "The Wealthy Flee Coronavirus.

Vacation Towns Respond: Stay Away."[1] We shifted uncomfortably in our chairs. Steps away, our pantry stood overstocked with pastas, lentils and parmalat. Perhaps my mom offered a weak, "Well, David and I would be out here on the weekends anyway…" I would sit quietly with this guilt and confusion for months.

Tensions between locals and newcomers have existed long before the pandemic. The present landscape is a tug of war between farm fields, seasonal restaurants, summer cottages, yacht clubs, fishermen's posts, and subdivisions. History is compressed in our landscape, as is the conflict over its ownership. The working and middle class (nurses, firefighters, agricultural laborers, young people) face a housing shortage. Our town names carry an older conflict. My town of New Suffolk and the neighboring Cutchogue occupy traditional Corchaug territories. With ten thousand years of human habitation on the East End, both land and water are crowded by people of past and present. I live within walking distance of both the North Fork Country Club and Fort Corchaug, a 340 years old archaeological site uncovered only thirty years ago.[2] Down the road at Wickham's Fruit Farm, a bicentennial family farm, the annual ploughing still turns up arrowheads.

As summer approached, the delayed spring gave rise to a gray and humid May. My family encouraged me to look locally for a summer job. I called nearby vegetable and dairy farms, but previous experiences had left me disillusioned with agriculture. On afternoon walks, I made a habit of stopping at New Suffolk Waterfront to speak to Sascha Rosin as she worked on the West Robins Oyster Company flupsy. These daily visits sparked both our friendship and acted as my introduction into aquaculture. Sascha explained that the floating (FL) upweller (UP)

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[1] Tully, Tracey, and Stacey Stowe. "The Wealthy Flee Coronavirus. Vacation Towns Respond: Stay Away." *The New York Times*, March 25, 2020. New York. https://www.nytimes.com/2020/03/25/nyregion/coronavirus-leaving-nyc-vacation-homes.html.

[2] Dennis, Jeremy. "Fort Corchaug." On This Site. Accessed May 17, 2021. https://www.jeremynative.com/onthissite/listing/fort-corchaug/.

system (SY) is a simple technology that facilitates rapid growth for shellfish. Resembling a floating porch, the flupsy acts as a nursery where oyster seed grows from the size of a couple millimeters to ¾ of an inch in diameter, the minimum size at which they'll survive in the bay. Many farmers will pay a premium to buy ¾ inch seed straight from a hatchery, but West Robins saved money by buying smaller, less expensive seed and growing it out themselves and selling surplus to other oyster farms.

Out of my and Sascha's friendship came a job offer. The company's plan for the summer was to process six million oysters in seed and Sacha needed help sorting oysters by size and maintaining the barrels. As I blundered through tasks and asked dozens of questions, Sascha responded with patience. I was initially intimidated by her: she was about to complete her degree from the School of Marine and Atmospheric Sciences at Stony Brook. But she was new to the flupsy, too, making mistakes and growing her understanding everyday. Her mentorship and friendship is the reason I felt there was space for me in the industry.

On the flupsy, I learned the intersection between care and business. During my twice daily checks, I cleared the oyster filters of sea squirts and crushed shells. Next, I stirred each barrel gently to ensure that the seed was growing in a round shape and getting a chance to breathe. Stirring also helped clear excrement from the barrels.

Morning and night, flupsy checks became my ritual. Its soundscape of water gurgling, creaking boards, motors idling, and ropes clanging on metal poles in the marina kept me company as I went about my tasks. As the summer progressed, I felt myself moving with growing confidence and identifying the contents of each barrel by touch rather than sight.

As the weeks progressed, I came to understand oyster farming as the art of avoiding small catastrophes. The day after a storm, I arrived at the dock and was disoriented by silence. The

system relies on the motor's constant suctioning water. In the case of a power outage or broken equipment, we only have twelve hours to fix the system before the oysters die. When the system is properly working, the barrel's high density is efficient, but without suction the oysters get crushed or suffocated. Thinking quickly, Sascha made a couple of calls and procured a generator. Within two hours, the flupsy was back to gurgling and sputtering. Out on the farm, however, challenges multiplied. Harsher storms and strong currents could wipe away cages. Predators like boring sponges and oyster drills tried to break into oysters' shells and eat them.

Yet, the work is easily romanticized, and it can be romantic. The West Robins crew, all under the age of 30, spent days following a salty cheorgeography. While some retrieved bags of oysters from the floating cages on the skiff, another pair would stay on the *Greta*, the mothership, managing the tumbler. The metal column sorts oysters by size and chips away new growth edges on their shells, allowing them to grow deeper cups with stronger shells. We refilled bags listening to disco and during breaks, Sascha and I dove into the water. Later while we culled and prepared orders, Will Peckham, the company president, talked about how growing shellfish is going to save the planet. The energy and idealism was contagious. Beyond raw bars and cocktail parties, our oysters and our labor represented a larger movement towards protein production coupled with restorative ecological practices.

Figure 1. The West Robins flupsy had twenty barrels affixed to a central pipe. A barrel could hold between ten thousand and forty thousand oysters, depending on their size. Engines on either end of the pipe suction water up through the bottom of the barrels, increasing oxygen flow and providing a constant phytoplankton buffet whilst suctioning out oyster excrement.

From my place at the tumbler, I saw how oysters foster micro-ecosystems. As one hand pushed oysters across the dashboard, I used the other to rescue little crabs and fish that had made their homes in the cages. One morning I found a dime-sized scallop amidst the heap of shells and held it up, grinning. Will brightened up. Earlier, he and Sascha told me that disease had caused a

major die off the year before. We celebrated the scallops' return. Over the course of the morning, I came across another, then another tiny scallop—probably six in total. I tried to multiply this density by the size of the Peconic Estuary — 150,000 square acres. Before I tossed the scallop back into the Bay, I paused to appreciate this tiny animal as testament to the resiliency of marine life. I idealized our work on the bay, but not everybody welcomed our presence.

The Peconic Estuary acts as a space of both leisure and work under the public trust doctrine. The bay is a space where motor boats, yachts, racing sailboats, dinghies from sailing schools pass by fishermen's skiffs and oystermen's workboats. All players' uses are protected, but not all stakeholders are equal or keen on sharing. One August day, our crew was interrupted by a security boat circling uncomfortably close to the farm. Large waves rocked the hull of *Greta* and we had to move to keep our balance. Will said that the security force normally tolerated the working crew, but today they must have felt particularly aggressive. As we tried to make out the sounds of their radio, another boat passed threateningly closely to the floating cages on the opposite side of the farm. Whether the boaters were intentionally intimidating or simply neglectful of their surroundings, the mood on the bay became tense. Like drawing property lines, their wakes partitioned the seemingly open waters into their dominion. Their actions transformed the Peconic Bay from an idyllic, timeless space to the center of a hostile battle over space and natural resources that stretches back centuries.

The following pages spotlight a handful of individuals who are working to "bring back" the New York oyster. Conversations with North Fork oyster farmers allowed me to appreciate the friendships and mentorships that have helped make this comeback possible. Through speaking to my interviewees, I addressed the curiosity I felt over the summer as I tried to understand this new world of people working on the bay. While out on the water, my coworkers gestured to other

oyster farms, waved to some boats, and not to others. Who are all of these people out on the bay? Why did we wave to some people and not others?

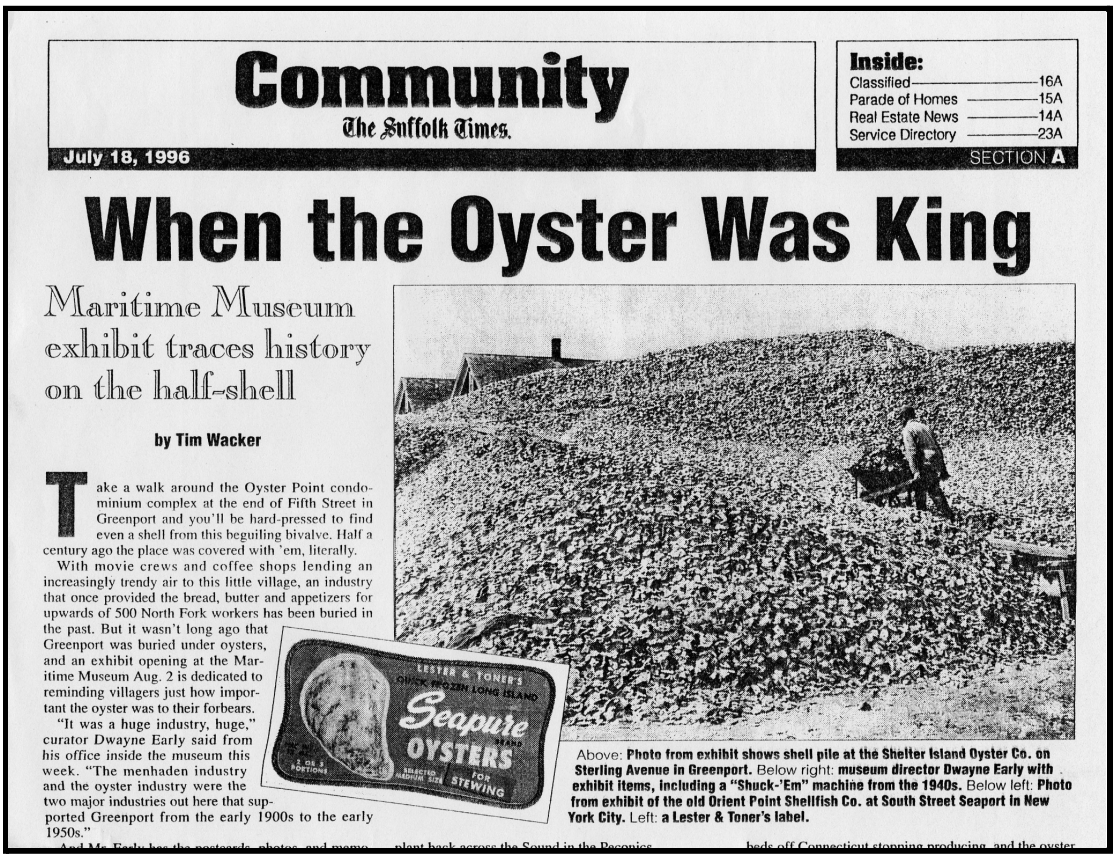
As an American Studies scholar, I ask: How do disputes over the SCALP program speak to a larger contested identity and history over natural resources on Long Island? Why is a working waterfront intrinsic to Long Island's sense of place? How does contemporary oyster farming fit into the historical legacy of American relationships to the water?

INTRODUCTION

BRINGING BACK THE NEW YORK OYSTER

Oystering along Long Island has a long and complex history. For thousands of years, oyster beds grew in abundance in the bays and estuaries of the East End, but with European colonization came unsustainable harvesting practices that led to complete collapse of the oyster beds and the surrounding ecosystem. Now, at the start of a new century, the possibility for oyster-rich bays may be found not in re-establishment of the natural ecosystem, but through the practices of small oyster mariculture farms placed in areas deliberately set aside for shellfish industries. This thesis examines the possibilities for the re-emergence of the oyster industry, as conceptions of a public commons and the public trust come into conflict with historical fishing industries and the growing transformation of Long Island into a tourist enclave for the wealthy. Against these forces, a loose network of small oyster aquaculture operations have banded together seeking to re-establish oysters both as an economic and ecological activity within the bay.

In studying the history of oyster culture, we see how hierarchical human-nature relationships are destructive and brought us to the current climate crisis. Oyster farmers who are presently spearheading the resurgence of their industry offer us a way out of this destruction. They provide us with an alternative and multifaceted model of relating to each other and marine ecosystems in a time of climate change. They model resiliency and community building in the face of a global pandemic and increasing economic hurdles. Their sustainable practices both defend our futures and enhance our social fabrics.



Community
The Suffolk Times.
July 18, 1996

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SECTION A

When the Oyster Was King

Maritime Museum exhibit traces history on the half-shell

by Tim Wacker

Take a walk around the Oyster Point condominium complex at the end of Fifth Street in Greenport and you'll be hard-pressed to find even a shell from this beguiling bivalve. Half a century ago the place was covered with 'em, literally.

With movie crews and coffee shops lending an increasingly trendy air to this little village, an industry that once provided the bread, butter and appetizers for upwards of 500 North Fork workers has been buried in the past. But it wasn't long ago that Greenport was buried under oysters, and an exhibit opening at the Maritime Museum Aug. 2 is dedicated to reminding villagers just how important the oyster was to their forbears.

"It was a huge industry, huge," curator Dwayne Early said from his office inside the museum this week. "The menhaden industry and the oyster industry were the two major industries out here that supported Greenport from the early 1900s to the early 1950s."

LESTER & TONER'S
Seapure
OYSTERS
FOR STEWING

Above: **Photo from exhibit shows shell pile at the Shelter Island Oyster Co. on Sterling Avenue in Greenport.** Below right: **museum director Dwayne Early with exhibit items, including a "Shuck-'Em" machine from the 1940s.** Below left: **Photo from exhibit of the old Orient Point Shellfish Co. at South Street Seaport in New York City.** Left: **a Lester & Toner's label.**

Figure 2. A 1996 *Suffolk Times* headline advertised the Greenport Maritime Museum's exhibit on the history of the oyster industry on Long Island. Twenty five years later, the museum is showing a similar exhibition. Image courtesy of John Holzapfel.

THE RISE AND FALL OF THE OYSTER INDUSTRY ON THE EAST END

The boom and bust of the oyster industry on the East End of Long Island is a fundamentally American tale. "Approximately 85% of oyster reefs have been lost worldwide, and the United States has lost 88% of oyster biomass since the late 1800s."[3] The East End is a

[3] Hoellein, Timothy J., and Chester B. Zarnoch. "Effect of Eastern Oysters (Crassostrea Virginica) on Sediment Carbon and Nitrogen Dynamics in an Urban Estuary." *Ecological Application*s 24, no. 2 (2014): 271–86. https://doi.org/10.1890/12-1798.1.

place where global processes like colonization are felt locally. Its history warns against the dangers of extractive capitalism. The estuaries of New York state are miraculous; its geography is the essential reason oysters thrived there. The region's tidal river mouths, creeks, crenulated bays, and high water flow made it host to some of the biggest oyster beds in the world.[4] Long Island's development relied on exploitation of its lands and fisheries. Centuries of over extraction have transformed these abundant commons into barrens.

An intimate and working relationship between Long Island waterways and the area's inhabitants have been critical for subsistence, economic development, and sense of identity. Native peoples such as the Shinnecock who have lived on the East End of the past ten thousand years were the original whalers who established the maritime and fishing economy. Post contact, Europeans learned how to survive from the Native populations already living on the East End. Diaries kept by colonists recall wading into creeks and gathering oysters by hand for dinner.[5] Yet, Europeans thought this abundance signified an endless supply. As Peter Matthiessen writes in *Men's Lives*,

> *In the frenzy of land-clearing that characterized the settlement of the New World, the settlers had obliterated most of the native hardwoods and destroyed much of the wild game; bear, wolf, and bobcat soon disappeared. And yet it seemed that the ocean and creeks and bays were inexhaustible, that the great multitudes of whales and fishes would always return.*[6]

Their appetite compounded by avarice, Europeans proceeded to mine the wealth from the sea whether that be shellfish, whales, or fish.[7] Once the oyster beds near the shorelines were depleted, the colonizers ventured out into deeper waters using tongs modeled after Indigenous/Lenape design. The invention of the dredge further accelerated and industrialized the

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[4] Greenberg, Paul. *American Catch: The Fight for our Local Seafood.* (New York: The Penguin Press, 2014), 22.
[5] Kurlansky, Mark. *The Big Oyster: History on the Half Shell.* (New York: Random House Trade Paperbacks, 2007).
[6] Matthiessen, Paul. *Men's Lives*. (New York: Random House, 1988), 8.
[7] Seaver, Barton. *American Seafood: Heritage, Culture & Cookery From Sea to Shining Sea.* (New York: Sterling Epicure, 2017), 5.

"strip-mining" of the seabed.[8] Local headlines between the 1850s and 1890s alternate between the "discovery" of millions of dollars worth of oysters in reefs along the North and South shores or announcements that the reefs were completely dredged out.[9] Ironically, these hyper extractive practices undermined the ecosystems that were simultaneously enriching Europeans and their descendants. The overfishing across the East Coast caused a "mass destruction" of the sum 343 square miles of oyster reefs that once populated New York State's waterways.[10] This caused, not only a dramatic shift in the physical environment, but a dramatically different way of relating to the environment. From a model of democracy and abundance, the "commons" that were the oyster beds and the seabed transitioned became the site of conflict over resources and privatization. Through this study of oyster history, we can understand the East End is a frontier where two different news of nature—one where humans are embedded in nature vs one where humans are outside of and exert control over nature—converged.

DIVIDING THE COMMONS

A closer look at oyster-culture on Robins Island serves a lens through which to trace the disruption of Indigenous society by Europeans, privatization of the commons and exploitation of natural resources for profit. The island was first privatized in 1615[11] when it was King Charles I deeded it to the Earl of Stirling along with the rest of Long Island. In 1652, ownership changed to the hands of Nathan Sylvester who intended the small island and Shelter Island for

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[8] Rather, John. "Call It Modern Clamming, or Strip-Mining." *The New York Times,* March 26, 2000. https://www.nytimes.com/2000/03/26/nyregion/call-it-modern-clamming-or-strip-mining.html.
[9] Holzapfel, John. "A History of the Oyster Industry on the East End." Oysterponds Historical Society, April 18, 2020. https://oysterpondshistoricalsociety.org/event/alone-together-virtual-lecture-series-a-history-of-the-oyster-industry-on-the-east-end/
[10] Fishers Island Oyster Farm. "The Future." Accessed May 17, 2021. https://www.fishersislandoysters.com/future.
[11] "A Battle Builds for Robins Island." *The New York Times*. October 2, 1983, sec. 8. https://www.nytimes.com/1983/10/02/realestate/postings-a-battle-builds-for-robins-island.html

provisioning sugar plantations in Barbados. A Radel Oyster Co. pamphlet from 1935 recounts that “Robbins Island” was previously called Anchannoch “in the Indian tongue.”[12] This is likely a reference to Munsee, the shared language between the Lenape and Pequot associated tribes in the area. The photo talks about colonial history/how the land is good for growing oysters and Indigenous presence persists in the landscape. Several middens of oyster shells predating European contact were recently discovered in the past.[13] During the American Revolution, the Robins Island was confiscated from Joseph Wickham for his loyalist sympathies.[14] In the late 1970s, ownership transferred from descendants of the area’s “first families” to investors. Today, Robins Island belongs to Wall Street financier and philanthropist, Louis Bacon whose home is the island’s only residence. Despite these frequent changes in ownership, oysters remain close to the island. Since 2016, the oyster cages of West Robins Oyster Co. hug the island’s shores. The farm’s relationship with the Bacon estate is somewhat precarious. Security vessels circle the island and pass the farm without greeting.

[12] Andrew Radel Oyster Company. *Robbins Island Oysters Promotional Pamphlet*. (South Norwalk, Conn: 1935). Courtesy of Mariella Ostroski.
[13] John Holzapfel, interview with author, March 17, 2021.
[14] "Robins Island," *Wikipedia, The Free Encyclopedia,* https://en.wikipedia.org/w/index.php?title=Robins_Island&oldid=983843369.

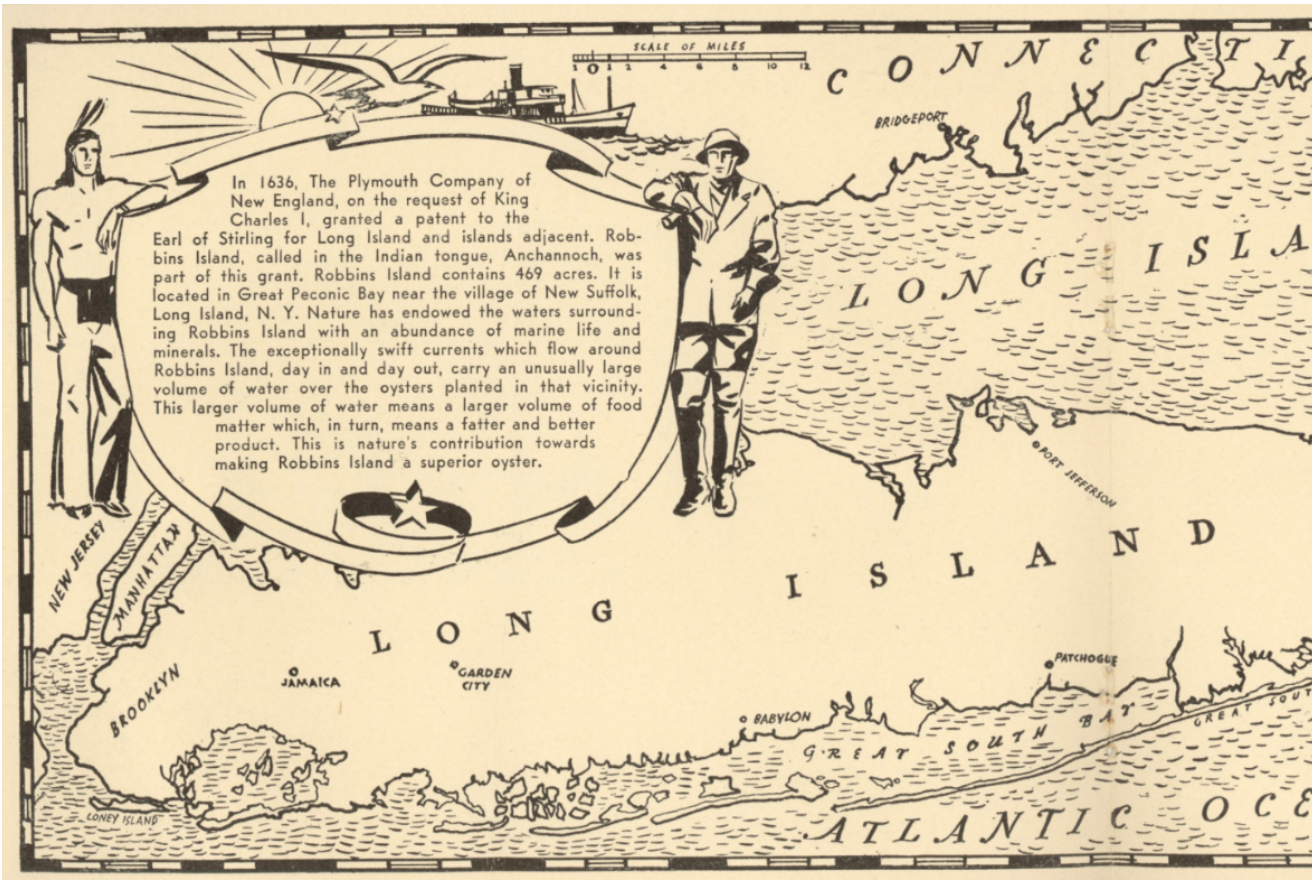

Figure 3. Excerpt from the Andrew Radel Oyster Company's pamphlet promoting Robbins Island oysters, copyrighted in 1935. The emblem to the left depicts a Native person and a fisherman flanking the company's promotional message. This choice naturalizes oyster aquaculture as a progression of colonization. Image courtesy of Mariella Ostroski and the Cutchogue New Suffolk Library.

With the natural reefs gone, oystermen transitioned from gatherers to farmers. They caught seed on crushed shells at the tidals mouths on the Connecticut side of Long Island Sound and later planted them on their farms. This deft use of natural seed was key to the area's domination over the oyster industry from the 1850s through the 1930s. The bay was busy with high industrial production of oysters kept on privately owned underwater grounds. In 1936, the oyster industry in Greenport employed 500 men who produced 2.5 million bushels, worth $4 million dollars then (not including supporting industries: estimation of 20 million). In today's

dollars that would be $71 million dollars.[15] Twenty-five years earlier, New York State as a whole produced 25 million pounds of oyster meats.[16] 1911 also marked the year when the United States produced 87% of global oyster exports.[17] The US reported nearly 27 million bushels while France came second with 3.25 million bushels.[18]

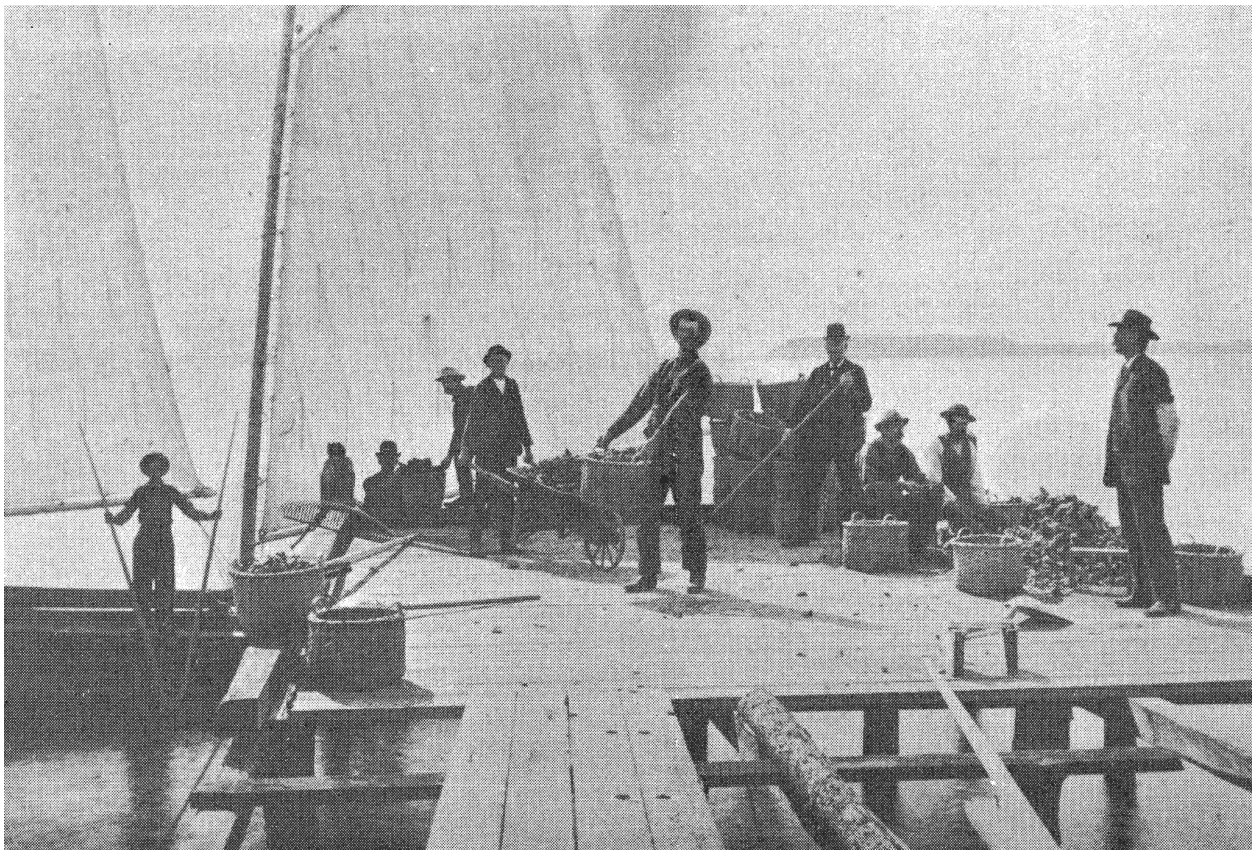

Figure 4. A staged photo of Greenport's working waterfront on 6th street in 1885. Men carry baskets of oysters. Lower left: man holds oyster tongs, a tool first developed by the Lenape. Image Courtesy of John Holzapfel.

Beginning in the 1950s, a series of misfortunes beset the oyster harvest on the East End. Die-offs from disease, predation, varying hydrographic patterns cumulatively bankrupted the

[15] Holzapfel, "A History of the Oyster Industry on the East End."
[16] Pawlik, Robert J. *Oyster Production in New York and Connecticut 1880-1972*. n.d. Shelter Island Historical Society.
[17] Stott, Rebecca.. *Oyster*. (London:Reaktion, 2004), 40.
[18] Ibid.

majority of oyster companies. In 1985, the brown tide collapsed those businesses that were still hanging on.[19] The downfall of this industry was not as dramatic and final as New York City's, where the reefs in New York Harbor were completely shut down because of sewage, parasites, disease and over harvesting. While oyster aquaculture never fully disappeared from the East End, for many decades the industry was but a whisper of its former glory. And during the same time, the economic landscape of the East End has become increasingly unequal.

In the last ten years, at least fifty new independent mom and pop oyster farms have established themselves on the East End, largely due to the support garnered by the Suffolk County Aquaculture Leasing Program (SCALP), which granted farmers secure access to underwater lands as well as growing interest in local, high-quality seafood boosted by the animal's historic presence in the area.[20] Although the industry hovers at just a fraction of what it used to be — as of 2014, national oyster production hovered at just 14 percent of its peak in the early 1900s[21] — it is seeing a comeback. Since SCALP's implementation in 2010, oyster harvests in New York State have increased by more than 177%.[22]

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[19] Holzapfel, "A History of the Oyster Industry on the East End."
[20] Long Island Oyster Growers Association. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program." Change.org. https://www.change.org/p/suffolk-county-legislature-support-the-expansion-and-continuation-of-the-suffolk-county-shellfish-aquaculture-program.
[21] Greenberg, *American Catch*, 11-12.
[22] LIOGA. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program."

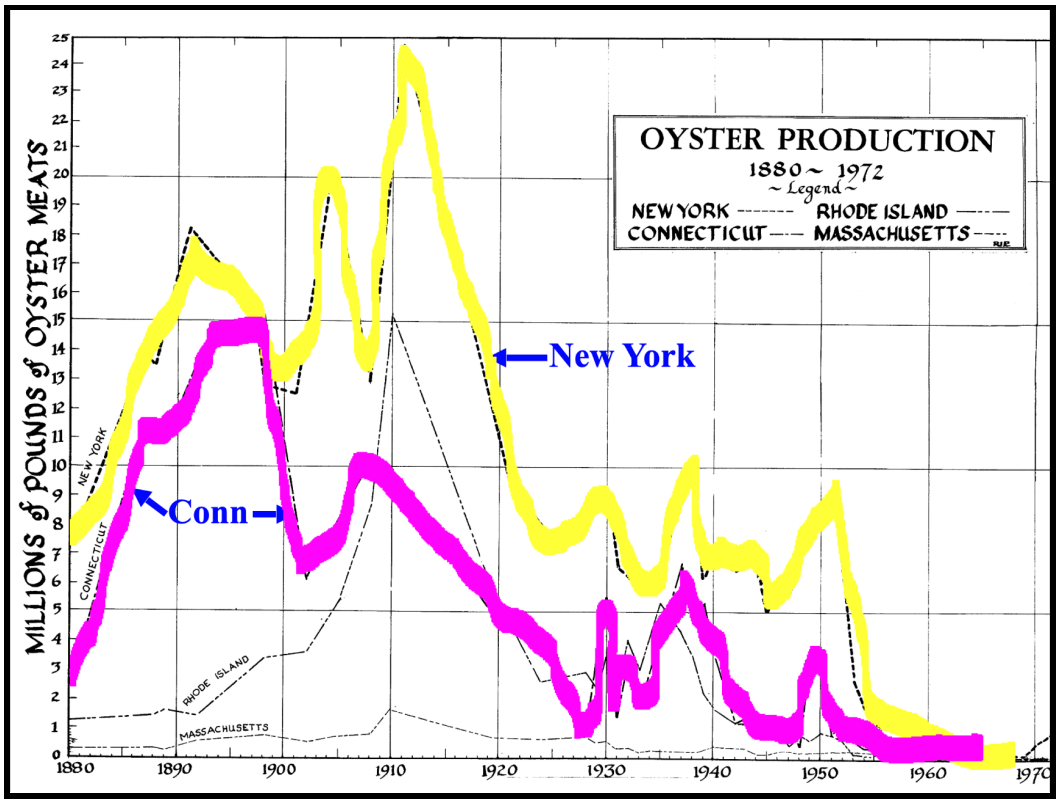


Figure 5. Oyster production tanked in the early twentieth century because of pollution, predation, and the exhaustion of natural beds. Image courtesy of John Holzapfel.[23]

The East End's shallow, protected waters and flowing current make it an ideal place to grow oysters. The Peconic Estuary, comprised of the Peconic and Gardiners Bay, is the workgrounds of seasoned and nascent oyster farmers. Yet, much like other places in the Mid-Atlantic and Northeast, the estuary's attributes also attract wealthy Americans to the area who buy and build second homes. In the mid-century, quaint fishing villages like Greenport transformed into summer colonies, and baymen lost their stronghold over the waterways.[24] Despite commercial oyster farmer's contributions to the foodshed and the allure of fresh high quality seafood, their work areas became an eyesore on vacationer's sweeping seascapes. In addition to the challenges brought on by the pandemic, 2020 marked the ten year review of the

[23] Pawlik, Robert J. *Oyster Production in NY & CT.*
[24] Paul Greenberg *American Catch,* 60.

Suffolk County Aquaculture Lease Program, which gave a platform to yacht club owners and recreational boaters to dismantle the very program responsible for kickstarting the industry and ensuring farmers' access to underwater land. The ensuing conflict exposed a web of social conflict and ecological interdependence. The region's surging population as a tourist destination has exacerbated pollution in the bays. The oyster is often cast into an environmental savior for its ability to filter fifty gallons of water a day. But the oyster is not a purifying sponge to pollutants like nitrogen run-off, or a tool to continue extractive lifestyles: it is a partner in our common survival in the age of climate crisis.

On top of the expected difficulties of running a small business, oyster farmers on the East End were forced to navigate the pandemic, and restaurant closures sent many businesses sales to zero. These commercial oyster farmers struggle to make their industry economically viable. While oysters on the halfshell can cost up to $4 at raw bars and restaurants, shellfish growers only earn about 65-85 cents before deducting labor costs. In the words of Call Nichols, the recruiter for the Shellfish Growers Climate Coalition, the business is "not exactly a gold rush." Nevertheless, oyster farmers leverage their power and community as they revive both ecosystem and industry.

Close study of oyster farmers has much to teach us about the good, bad, and ugly of our social and ecological interdependence. Whether in their first or thirtieth season, these individuals approach this work with embedded values of inclusivity and equity, determined to overcome conflicts over resources, establish mutually beneficial relationships, and model empathetic and mindful relationships with nature all while making national strides for climate action. The stories and voices of people whose lives and livelihoods revolve around oysters whether through farming, shucking, or restoration, are an essential part of this story. Interviews with industry

matriarchs with decades of experience, industry newcomers, and Indigenous oyster growers, come together to show a glimpse into this social ecosystem. While "fishermen" and "baymen" are typically conveyed as male-dominated vocations, the following interviews pay specific attention to the contributions of women making their way in the industry.

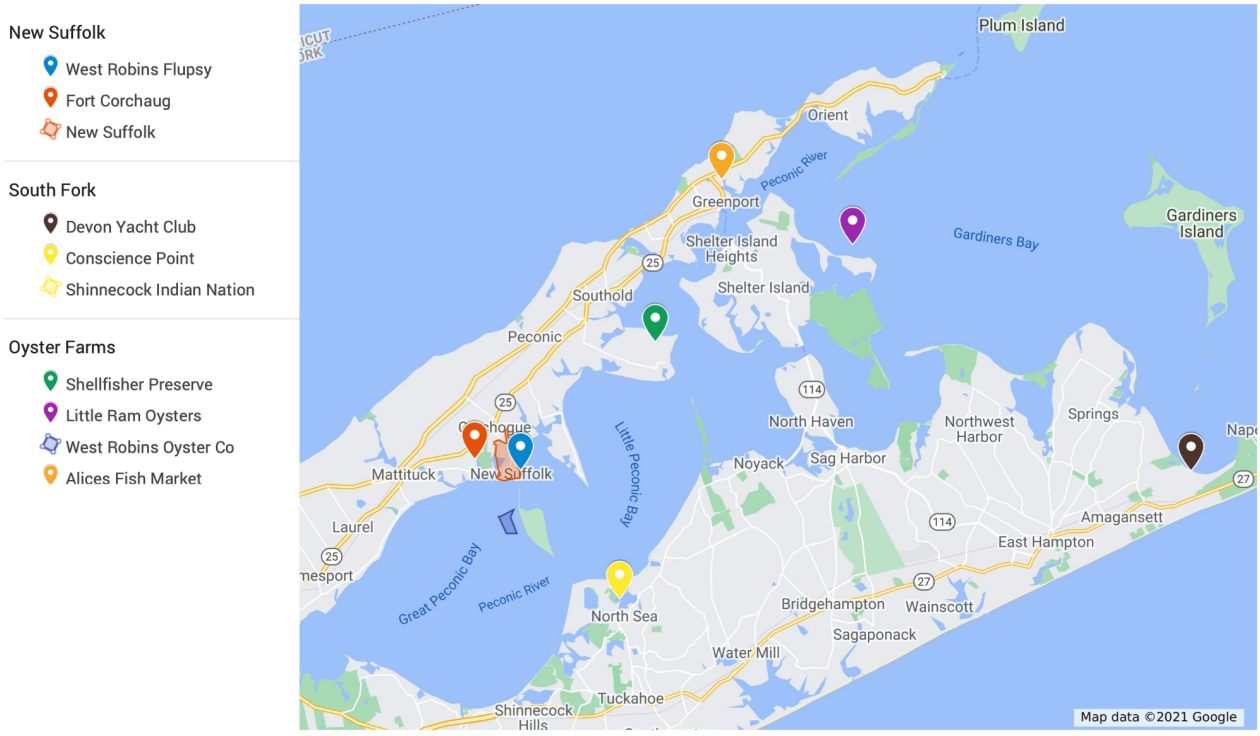


Figure 6. Interactive map of the East End marking some oyster farms and other relevant sites like Alice's Fish Market and the Devon Yacht Club. Oysters are stationary creatures, as they filter and inhale all that surrounds them, they come to embody the estuary where they live. As location directly determines the quality and flavor of a product, oysters growers name their companies after their local estuaries: Little Ram after Ram Island; Peconic Pearls after the Peconic Bay; West Robins after Robins Island.

The subsequent chapters unfold a web of mentorship led by women undergirding Long Island's oyster industry. Mentorship from Karen Rivara of Aeros Cultured Oyster Co. and Sarah Malinowski of Fishers Island Oysters played a key role in welcoming relative newcomers Stefanie Bassett, Elizabeth Peeples, Melanie Douglass, and Call Nichols into the industry. Rivara and Malinowski's companies produce oyster seed for many companies in the area. The women

also served as co-founding members for multiple local, regional, and national aquaculture and farming associations. Rivara helps lead the Noank Cooperative, East End Marine Farmers Association and the East Coast Shellfish Growers Association and Malinowski sits on the executive committee for the Shellfish Growers Climate Coalition.

In chapter one, a cohort of North Fork oyster farmers fight to defend the Suffolk County Aquaculture Lease Program from the SCALP Reform Task Force, a conglomerate of affluent second homeowners and yacht clubs. The Long Island Oyster Growers Association (LIOGA) advocates for the social, economic, and environmental interests of more than fifty Long Island oyster growers. Their battle to renew the SCALP program is hardwon and exhausting against wealthy South Forkers whose usership degrades the waterways. SCALP's contentious ten year review served as a microcosm for a decades old class conflict between the East End's working class and infringing leisure culture. Under the public trust doctrine, the Peconic Estuary is a contested commons, respectively objectified and polluted. While many uses of the bay are protected, affluent users prioritize short term enjoyment over the waterways' long term health. The dominance degrades the ecosystem and pushes out working class water laborers. The "commons" model, as delineated by the public trust doctrine, produces an exclusive and unsustainable way of resource sharing.

Chapter two delves into the ways oyster farmers relate to other people on the Peconic Bay and on land under a collaborative and cooperative model. This sociality depends on inclusive and mutually beneficial relationships. It highlights relatively new oyster farmers, Melanie Douglass, who is a local, as well as Stefanie Bassett and Elizabeth Peeples who are New York City transplants. They talk about their integration into the industry as women and their experiences building a working waterfront with wild-catch fishermen and baymen.

It is important to introduce "baymen" as a term to describe a group of laborers who derive their livelihoods from the bay by gathering fish and shellfish to sell to market. Baymen or fishermen may participate in netting, trapping, dragging, shellfishing, and setting pots within one year. Many of these men trace their lineage back to the first European families to arrive in the area. Overfishing and pollution in the past hundred years have depleted the wild fisheries. This, and the increasing cost of land on the East End have rendered their vocation nonviable. For the purposes of this paper, this group is kept separate from commercial oyster farmers. When both are referred to together, it is under the name "water laborers."

Sarah Malinowski and her family at Fishers Island Oyster Co. were key mentors for Call Nichols — the central recruiter for the Shellfish Growers Climate Coalition which is explored in chapter three. Oyster farmers who are out on the water each day witness the effects of climate change. The SGCC acts as a platform for shellfish growers to speak about temperature changes, disease, and algae blooms harming their livelihoods. Aeros Cultured Oysters, West Robins, and Little Ram are among 200 SGCC members lobbying together for federal action on climate. The coalition organizes its diverse group of industry stakeholders to fight long term viability of the ecosystems that support the oyster industry. In addition, the SGCC hopes to redefine the farmer's role in America and embed it with the spirit of the cooperative.

The oyster industry is experiencing a resurgence, but evidence of human-oyster entanglement in New York reaches back thousands of years. From the East End to Manhattan to the Hudson Valley, oyster middens are omnipresent. Indigenous peoples such as the Mountaukett and Shinnecock were the first original baymen in the area and established the maritime economy. They depended on oysters for subsistence. Four hundred years after European contact, members of the Shinnecock Nation continue shellfishing and asserting their sovereignty. Shane Weeks of

the Shinnecock Nation worked in the tribal hatchery program in 2006 for several years. [Karen Rivara got her start in hatcheries working at the Shinnecock Tribe Oyster Project in 1983 as a research technician for SUNY Stony Brook. As the present generation of oyster farmers talk about recharacterizing American relationships to the water, it is important to pay attention to how colonialism and extractive relationships were the forces behind our present ecological challenges.

These contemporary conversations joined with legal readings, property rights, historiography, local newspapers, and local archives influence my methods.

The oyster farmers today forge a more ecologically aware and community-minded set of relationships and practices in order to save their working waterfront. The most recent rise of oyster-culture is not necessarily a "back to our roots" moment on Long Island. This paper does not seek to glorify the abundance of the 1600s as some kind of time to travel back to. People working with oysters today exist in a vastly different waterscape, a distinct political moment, and confront increasing threats of sea level rise, harsher storms, and algal blooms. Long Island oyster farmers' collaborative and inclusive determination to keep a working waterfront alive represents so much more. As oyster farmers restore their micro-ecosystems, they also work collaboratively to restore relationships among water-laborers like baymen and fishermen. Their cooperatives represent a reaching for survival and a commitment to a mutually beneficial relationship with fellow baymen and the water.

Oystering is a means of perpetuating a working waterfront and keeping a human-water relationship alive. Can this resurging industry help change the way humans interact with their waterways on the North Fork?

CHAPTER ONE:

A CONTESTED COMMONS

2020 was a particularly rocky year for oyster farmers. The pandemic coincided with the ten year review of the Suffolk County Aquaculture Lease Program (SCALP). Amongst the unexpected struggles of restaurant closures and the readaption of their business models, East End oyster growers had to defend their water access against opposition from their supposed community members. The ten year review unfurled a particularly complex network of people who have various investments in the land and water of the East End. Yacht club representatives, recreational boaters, and second homeowners — organized in the SCALP Reform Task Force — attacked the program for infringing on their right to navigate and access the Peconic Estuary. Oyster farmers, whose properties take up less than 1% of the estuary's footprint, rely on water access for their livelihoods which are already under threat from the pandemic. Although the SCALP Reform Task Force's accusations are misguided and false, the group's socio-economic status ultimately hinders the program, which was renewed but diminished in March of 2021. The ensuing conflict exacerbated pre existing class tensions from the East End's transformation from fishing and farming villages to a summer colony. Examination of the ten year review reveals the failings of natural resource management under the public trust doctrine.

The public trust doctrine grants too many players "equal" access to the waterways, leading to a contested commons with multiple parties jockeying for their right to use (and abuse) it. The SCALP Reform Task Force and oyster farmers clash because they are all individuated stakeholders with competing interests and "environmental" expectations. Affluent stakeholders prioritize their own usage and privatize the commons while blocking others' access. Their "exclusionary commons" pushes out working class baymen and oyster growers from both land

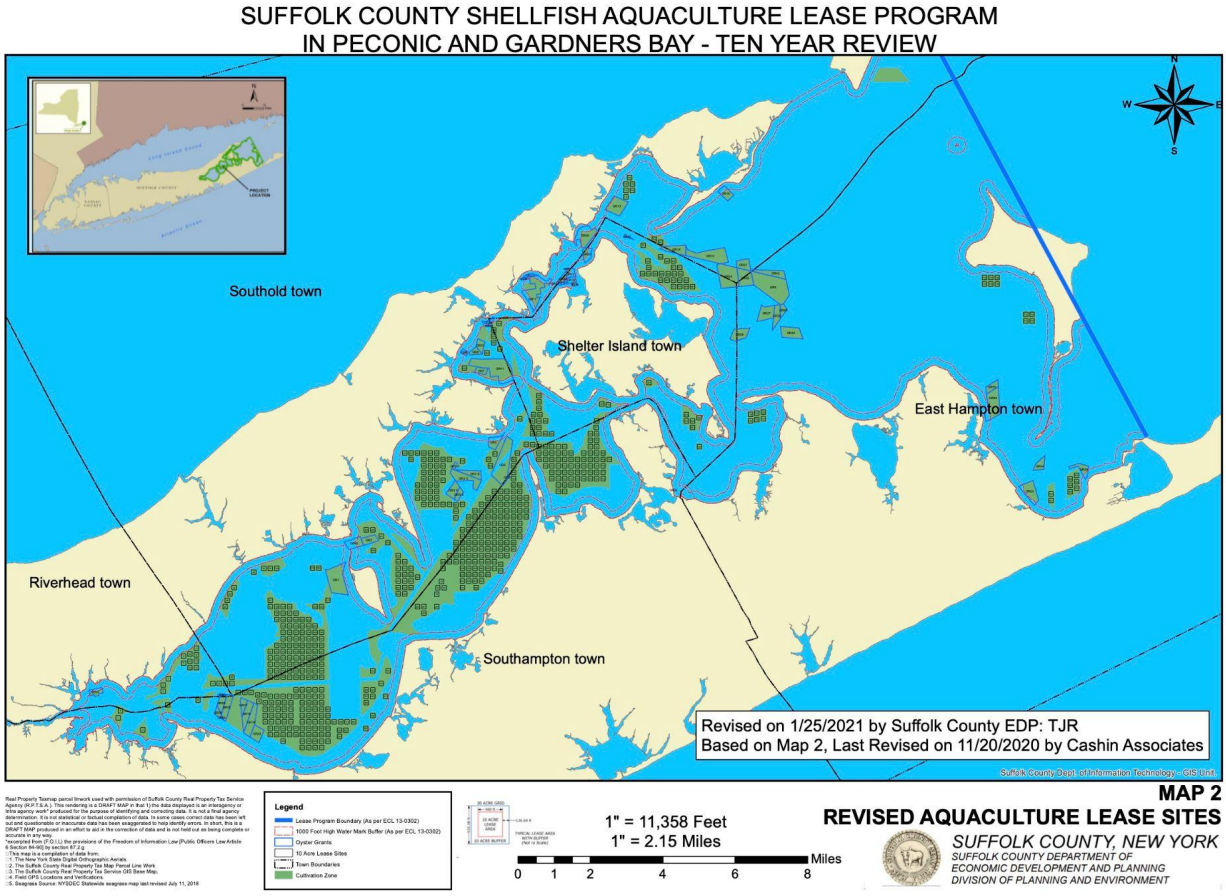
and sea. In addition to exposing a hierarchical human sociality, the ten year review process exposed East Enders' extractive relationship with natural resources. The commons model entrusts the government with taking care of the commons while entitling the public to ecologically harmful activities. Distracted with selfish conflicts over petty usage, East Enders cannot adequately address nitrogen run-off and algal blooms which threaten to turn the Peconic Estuary into an ecological dead zone. The public trust doctrine ultimately fails because it produces too much social contestation and permits too much ecological degradation.

WHAT IS THE PUBLIC TRUST?

The public trust is a model that protects many uses of the bays, some of which are harmful, and renders the government responsible for managing and safeguarding the bay's perpetuity. The public trust doctrine is a historically enduring and evolving legal concept meant to protect natural resources. The roles are such: government is the caretaker, entrusted with the perpetuity of the commons so it may be used by the public. The commons themselves, the underwater lands and waterways, are owned by the people. In the United States, the government becomes the trustee responsible for protecting citizens' access to the coasts and waterways and consequently the government's ability to convey the commons.[25] On the East End, all 158,056 surface water acres (247 sq. miles)[26] of the Peconic Estuary are protected for mixed use under the public trust doctrine. The doctrine originally was meant to clear the way for maritime trade, navigation, and fishing activity. As most of these economies have died off, recreational boating has taken over use of the commons. Unfortunately, recreational boating negatively impacts marine ecosystems. Motor boats transport invasive species, cut through wildlife areas, and emit

[25] Salkin, Patricia E. "THE USE OF THE PUBLIC TRUST DOCTRINE AS A MANAGEMENT TOOL OVER PUBLIC AND PRIVATE LANDS." *Albany Law Journal of Science & Technology* 4, no. 1 (1994): 2.
[26] Schaefer, Sarah. "Peconic Estuary: State of the Bay." *Peconic Estuary Program*, August 31, 2017, 28.

carbon dioxide. Boating is also associated with increased levels of pollutants in marine life and nutrient concentrations in water, leading to algae blooms and eutrophication (low oxygen levels).[27] While boating on the Peconic's open waters is the public's right, the activity also degrades it. The "trustee" (government) must allow space for this damaging usage while simultaneously safeguarding the trust for the public's long-term benefit. Fortunately, growing public concerns for water quality and loss of biodiversity caused the definition of the public trust to expand.



[27] "Managing Nonpoint Source Pollution from Boating and Marinas." United States Environmental Protection Agency. Accessed May 10, 2021. https://archive.epa.gov/water/archive/web/html/point9.html.

Figure 7. Map depicts revised lease sites for the Suffolk County Aquaculture Lease Program. During the ten year review, the potential cultivation zone was reduced from approximately 30,000 to 17,000 acres.[28]

The perpetuity of the public trust rests in the protection of the Peconic Estuary's ecosystems, but relatively newer environmental concerns clash with users who degrade the commons. The Peconic Estuary is the basis for aquaculture, fishing, and recreation economies on Long Island. In 1972, the same year that the Clean Water Act was passed, the District Court of Suffolk County declared, "The entire ecological system supporting the waterways is an integral part of them and must necessarily be included within the purview of the trust."[29] Marine life and plants like oysters which filter water and protect shorelines fall within this category. It is in this context that the Suffolk County Aquaculture Lease Program (SCALP) emerges as a way to bolster the health of the commons and the local aquaculture economy. SCALP provides secure water access to commercial oyster growers and researchers in the form of ten acre plots on the bay. Their farmed oysters then spawn naturally, increasing wildstock populations and filter approximately 900 million gallons of water daily.[30] Furthermore, the Long Island Oyster Growers Association reported that oysters from SCALP farms helped remove "more than 192,188 pounds of Nitrogen and more than 57,382 pounds of Carbon from the water in 2019 alone."[31] It could be said that SCALP is a way for the government to outsource stewardship of the waterways to commercial oyster farmers whose business relies on the long-term perpetuity of the commons. Yet, as the trustee answering to the public, the government must still allow for

[28] Cashin Associates. "SUFFOLK COUNTY SHELLFISH AQUACULTURE LEASE PROGRAM IN PECONIC AND GARDNERS BAY - TEN YEAR REVIEW." Digital. (Peconic Bay: Suffolk County Department of Economic Development and Planning: November 20, 2020). https://www.suffolkcountyny.gov/portals/0/formsdocs/planning/EnvPlanning/Aquaculture/Updated%201-25-21%20Proposed%20Lease%20Sites%20Map.pdf.
[29] People of Tn. of Smithtown v. Povermo, (Suffolk County 1972) via "History of the Public Trust Doctrine." Fairfield Beach Access. Accessed May 10, 2021. https://www.fairfieldbeachaccess.org/history.
[30] LIOGA. "FAQ'S." Accessed March 17, 2021. https://www.liogany.org/faqs.
[31] LIOGA. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program."

ample use by recreational boaters. By protecting so many uses — fishing, aquaculture, recreational boating, bathing, etc. — the public trust doctrine has created a contested commons where multiple parties (oyster farmers, baymen, boaters, yacht clubs, second homeowners) jockey for their right to the space. Since the public is not directly charged with managing the Peconic Estuary's longevity, people are led to believe they have a right to the bays without having a responsibility for the effects of their potentially harmful usage. The public trust model produces a sociality where those with economic power exploit the space without being held accountable for the consequences of their usage on the bay or land. The community-wide harm inflicted by this selfish attitude manifests in the fallout of SCALP's ten year review.

PART ONE: CONSTRUCTING AN EXCLUSIONARY COMMONS

The SCALP Reform Task Force falsely claims that SCALP farms privatize the public trust, warping public/private dichotomies. Despite SCALP's immense value to the community and economy, it has not been celebrated unanimously. A small yet fierce group of South Fork yacht club representatives and second-home owners—known as the SCALP Reform Task Force—launched an attack against the program during its ten year review in 2020. In a ninety-nine page letter to their state legislators, the SCALP Reform Task Force paints the program as if it were an assault on the public trust.

> *Bay users and local citizens whose rights to enjoy our unspoiled, open waters are now increasingly under threat from unregulated aquaculture gear installed by private aquaculture farmers. SCALP, however well-intentioned, has generated user conflicts, and violates state and local laws and policies, including paramount public navigation rights. SCALP must be reformed.*[32]

[32]The SCALP Reform Task Force. "Letter to Legislators of Suffolk County," (January 31, 2021), 1. https://citizensofgardinersbay.org/wp-content/uploads/2021/02/scalp_oysters_ltr_amend_adminguid_i1981-20_210202.pdf.

This association of boaters, yacht club affiliates, and homeowners turn oyster growers' activities into the top threat to the Peconic's "unspoiled, open waters" as if these "private" businesses were taking over control of the public trust. This claim is both dramatic and untrue given these leases occupy less than 1% of the bay[33] and that the plots remain open access. They only give farmers the right to cultivate their oysters *within* the boundaries of their lease. Karen Rivara of Aeros Cultured Oyster Co. added that farmers cannot prohibit anyone from sailing through their farms or stop a fisherman from anchoring near their gear.[34] As for space, presently only 780 acres of the 158,056 acre estuary are leased between 55 oyster growers.[35] Within these 780 leased acres, only the county estimates only 300 acres are actively farmed and within that, an even smaller percentage contains floating gear.[36] When the SCALP Reform Task Force ridiculously claims that SCALP farms, which take 0.5% of the estuary, violate "paramount public navigation rights," they reveal that they are simply advocating for their own domination of the space. This association of residents and boaters want to protect sweeping bayviews void of buoys and workers. This expectation of pristine water and "untouched" landscapes powers the tourism and recreational boating economies on the East End. The SCALP Reform Task Force's letter points to clashing understandings of what it means to occupy space on the Peconic, who should own the land, and whose usage should take precedence.

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[33] LIOGA. "FAQ'S." Accessed March 17, 2021. https://www.liogany.org/faqs.
[34] Karen Rivara, interview with author, February 9, 2021.
[35] Harrington, Mark, and Rachel Blindner. "Suffolk Lawmakers Approve New Aquaculture Leases, Rules." (*Newsday*, March 2, 2021). https://www.newsday.com/long-island/politics/suffolk-oysters-aquaculture-1.50170045.
[36] Ibid.

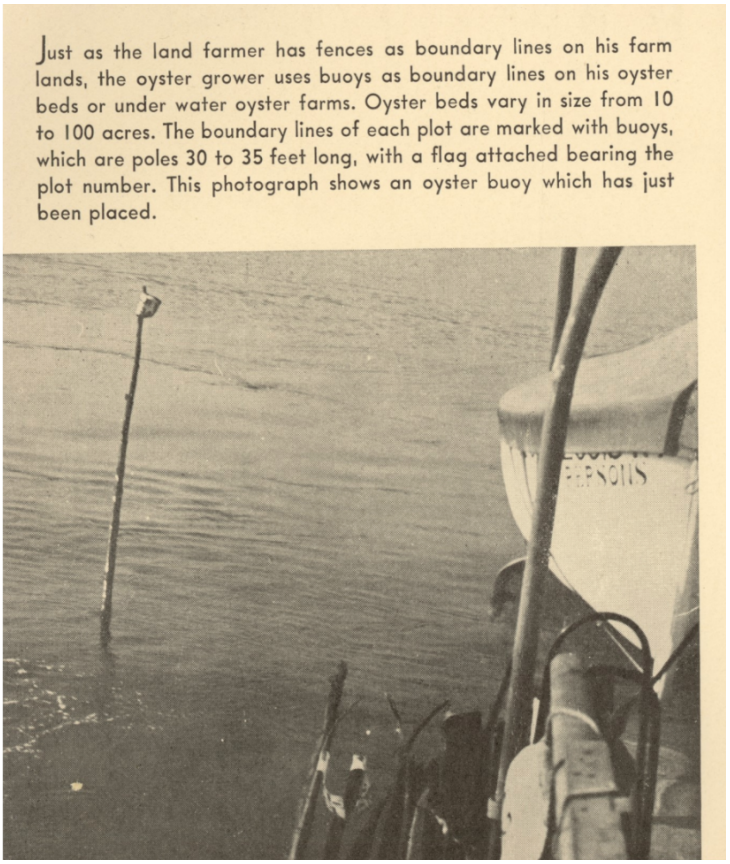

Figure 8. Buoys, which have been a particular complaint from homeowners for ruining sweeping seascapes/the viewshed, have been used by oyster farmers to mark submerged equipment and farm boundaries for at least a hundred years. The Radel Oyster Co. pamphlet from 1935 states, "Just as the land farmer has fences as boundary lines on his farm lands, the oyster grower uses buoys as boundary lines on his oyster beds or underwater oyster farms." SCALP detractors are uninformed about the realities of aquaculture and unaccustomed to seeing a working waterfront in action. They sound the alarm at gear as if it were a harbinger of change when really it is the physical manifestation of attempts by oyster farmers to revitalize their once lustrous industry.

The SCALP Reform Task Force condemns SCALP farmers' "private appropriation of public waters,"[37] but such abhorrence is unnecessary given their connections to a much more economically powerful cohort of marinas and yacht clubs. The ten year review process could be compared to an economic battle between David and Goliath, wherein extremely wealthy marinas try to overpower underdog oyster farmers. New York State is home to the fourth largest marina

[37] SCALP Reform Task Force. "Letter to Legislators of Suffolk County," 1.

industry in the United states. Its estimated 810 marina enterprises generated $1.3 billion in economic activity in 2018.[38] For reference, California's 1,200 marina businesses, the second greatest number in the nation, accounted for $1.4 billion in economic activity in that same year.[39] New York's marinas, while relatively fewer in number, each possess a higher portion of capital. Not all of the state's marinas are on Long Island, but it is safe to assume that marinas contribute significantly to the region's "ocean economy"[40] which generated an estimated $2.4 billion in economic activity in 2018.[41] In the *ten years* since SCALP launched, the Long Island oyster industry sparked more than $9.3 million in economic activity to Suffolk County and the creation of more than fifty shellfish farms.[42] Even though these statistics are working on different scales (NY State vs Long Island region vs Suffolk County), they convey the marinas industry's towering economic influence over oyster aquaculture. In terms of physical impact, construction at marinas can worsen erosion and destroy sensitive marine ecosystems dwelling on the bay bottom.[43] Oyster farms, on the other hand, foster hubs of aquatic life. Therefore, when individuals like Peter Mendelman of Seacoast Enterprises, which operates four marinas in East Hampton, oppose the continuance of the leasing program in statements such as "We're gonna pave paradise and put up a parking lot. We're giving public space to oyster farmers,"[44] one cannot help hearing the irony. How can a marina operator, whose business privatizes and damages the shoreline and seabed, claim that a few oyster farms erodes the public trust? Because

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[38] Marina Industries. "U.S. Marina Industry Economic Impact Study," (May 2018) 8. https://marinaassociation.org/files/AMIMEIS_FullReport_Final_05-2018_wAppendix(1).pdf#5.
[39] Ibid.
[40] The ocean economy is centered on recreational and commercial fishing, but also includes tourism related ventures like marinas, hotels, restaurants.
[41] NY Sea Grant. "New Economic Report Identifies Keys to Long Island Growth in Tourism, Fishing.," December 2018.https://seagrant.sunysb.edu/articles/t/on-youtube-new-economic-report-identifies-keys-to-long-island-growth-in-tourism-fishing-marine-fisheries-resource-center-research-news.
[42] LIOGA. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program."
[43] "Managing Nonpoint Source Pollution from Boating and Marinas." US EPA.
[44] Young, Beth. "The Next Ten Years: Suffolk Seeks Feedback on Oyster Farms." *East End Beacon*, December 19, 2020. https://www.eastendbeacon.com/the-next-ten-years-suffolk-seeks-feedback-on-oyster-farms/.

of their industry's superior economic authority, Mendelman and other marina representatives defend their harmful usage of the waterways under the pretense of protecting the public trust. The commons model ultimately produces a set of relationships where those with privilege prioritize their preferred usage of the commons and push out oyster farmers who are simply trying to make a living.

The SCALP Reform Task Force and Devon Yacht Club's opposition to SCALP, voiced bitterly in town meetings and court rooms, demonstrates a disregard for oyster farmers who are their community members, and ultimately construct an exclusionary commons. On Long Island, the wealthy seal themselves off within an "exclusionary commons"[45] in the form of private waterfronts at second homes and yacht clubs. SCALP detractors claim oyster grower's buoys block navigation rights, but is it just that these buoys interfere with idealistic vistas? While fresh oysters are happily enjoyed by yacht club members, there is little recognition and understanding of the labor force that rears them. Melanie Douglass of Peconic Pearls explained that oyster farmers are "good when [SCALP detractors] want to eat an oyster, but not when [they] want to look out on the bay and not see anything but crisp clear water."[46] The Devon Yacht Club of East Hampton laid the groundwork for a difficult ten year review of the aquaculture leasing program when it filed suit against the Amagansett Oyster Co. and Suffolk County's Aquaculture Lease Board in 2017, claiming the farm's floating gear interfered with boating activities. The case dragged on for two years, escalating and embittering pre-existing tensions between recreational boaters and oyster farmers. For beginner oyster farmers who are barely making ends meet, the lawsuit was financially devastating. Karen Rivara of Aeros Cultured Oysters Co. said the lawsuit created a hostile and distrustful environment where reasonable conversation between oyster

[45] Harvey, David. "The Future of the Commons." *Radical History Review* (January 1, 2011): 103. https://doi.org/10.1215/01636545-2010-017.
[46] Melanie Douglass, interview with author, January 26, 2021.

farmers and recreational boaters is nearly impossible.[47] Marina businesses should have a vested interest in the perpetuity of the commons and its health, but rather than collaborate with oyster farmers, they seek to eliminate them. Litigation against a fledgling industry demonstrates an unwillingness to converse with farmers as equals. The commons model allows for those with economic influence to demand the aesthetics of "pristine bays" while disregarding the people whose work directly benefits their shared space (and their cocktail parties). SCALP detractors are not willing to work with community members, even though oyster farmers' usage is protected under the public trust doctrine, further reinstating an exclusionary commons.

PART TWO:
IMPACTS OF THE EXCLUSIONARY COMMONS & RESULTS OF THE TEN YEAR REVIEW

The SCALP Reform Task Force's refusal to converse with oyster farmers prevented the groups from co-creating mutually beneficial regulations and ultimately worsened community relations. The SCALP Reform Task Force petitioned the Suffolk County legislators to impose regulations they believed would solve user conflicts on the bays.

> *The best fix for SCALP and the ongoing conflicts it causes, is to regulate floating gear, and to give local towns and bay users real control over the program, especially in their local waters, as a prudent check and balance on an agency too much steered by the industry it should regulate.*[48]

In essence, the letter argues for non-oyster growers to control this supposed wily crop of oyster growers. Instead of the two parties being able to work out a problem together, the SCALP Reform Task Force petitions the government to have authoritarian control and implement regulations that may be arbitrary. This approach to conflict does not work to a mutually

[47] Karen Rivara, interview with author, February 9, 2021.
[48] SCALP Reform Task Force. "Letter to Legislators of Suffolk County," 1.

beneficial solution. On March 2, 2021, the Suffolk County Legislature unanimously approved to continue the SCALP program with added regulations and logistical hurdles for farmers. The program will lease 600 new acres in Peconic Bay and Gardiners Bay over the next 10 years, but the potential cultivation zone was diminished from 30,000 acres to 17,000 acres, meaning less opportunity to expand or relocate farms.[49] The program is also getting more expensive. The ten acre leases, which currently cost $150 annually, would increase to approximately $1,000 per year in the next six to ten years.[50] Furthermore, to address complaints about farms posing a navigational hazard, oyster growers are required to mark the corners of their lease sites with four radar-reflective, 36-inch tall buoys that must also be "visible from at least a nautical mile away."[51] These specific markings pose not only a hassle to farmers, but go exactly against the wishes of those who complained about buoys being an eyesore on bay. While buoys associated with floating gear were merely tools for the farmers, these state-mandated buoys act as property markers and add a sense of enclosure to the water. In sum, SCALP has been renewed but diminished. The program's opposition demanded added restrictions on aquaculture activities and SCALP farmers advocated for the continuance of their program, but the state's decision did not lead to a win-win situation. If the resulting regulation was not mutually agreed upon, can it be considered a solution? Oyster farmers who were merely trying to feed their families were berated by the Devon Yacht Club then SCALP Reform Task Force for three years. Any decision announced by the Suffolk County Legislature would be unable to alleviate the damage done to community relations. The contention surrounding the ten year review ultimately acted as a microcosm of the widespread class conflict on the East End.

[49] Young, "The Next Ten Years: Suffolk Seeks Feedback on Oyster Farms."
[50] Ibid.
[51] Ibid.

The ten year review process embittered preexisting class conflicts where the wealthy push out water-laborers from both land and water and transform the East End into a tourist destination. Recreational boaters' takeover of the bays mimics/echoes the way that second homeowners have taken over the land. Karen Rivara of Aeros Cultured Oyster Co. explains, "All across the country, people with wealth are moving to the coasts and buying up all those pretty places that were previously only farming or fishing towns."[52] The decline of fishing villages like Greenport is in part due to the collapse of wild fisheries in the early-mid century, but also because of the increased cost of real estate. On the North Fork, still significantly less expensive than the South Fork, waterfront homes price from $2 million to $10 million."[53] Priced out of their communities, many of Greenports traditional/old fishing families moved elsewhere or changed professions. Those who stayed, like Mary Bess and Mark Philips who own Alice's Fish Market, watched over recent decades as the number of commercial fishing boats dipped from more than two dozen to one.[54] The harbor today is populated with recreational boats and yachts. Town streets, once marked by packout houses and boat services that supported the fishing industry, now house boutique hotels, higher-end restaurants, and surf shops. Both baymen and oyster farmers face difficulties finding and affording workspace with water access.

The East End's transformation into a summer colony reshaped the built environment, land, water, and even the air. The ecological effects of overdevelopment degrade the commons and undermine baymen's ability to earn a livelihood. Bayman Chip Moran, whose ancestors have been in the Hamptons since the 1700s, watched overdevelopment on the shores destroy his livelihood. From his boat on Shinnecock Bay, he watched airplanes spray for mosquito control.

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[52] Karen Rivara, interview with author, February 9, 2021.
[53] Sussman Fischler, Marcelle. "Brooklyn on the North Fork." *The New York Times,* May 6, 2016. https://www.nytimes.com/2016/05/08/realestate/brooklyn-on-the-north-fork.html?smid=url-share
[54] Wick, Steve. "Capt. Mark Phillips and the Illusion, the Last of Its Kind." *North Forker,* September 5, 2018. https://northforker.com/2018/09/capt-mark-phillips-and-the-illusion-the-last-of-its-kind/.

This action disrupts the food chain and causes fish to die because they have no food sources. The previous abundance of mosquitoes along bays and marshes used to make these locations undesirable places to live. As these locations now contain multimillion dollar homes, spraying enhances the experiences of vacationers. At this moment, class conflict has both economic and environmental impacts. Spraying mosquitos in the air directly harms the fish in the water and the baymen on land. This domino effect reveals a web of interdependence and the vulnerability wrought by an exclusionary use of the commons. Environmental degradation ruins Chip Moran's catch and his family ultimately moves to New Hampshire, where he takes up a new career hundreds of miles away from his family's home of more than two centuries.[55] Other environmental hazards from human development, such as nitrogen runoff from septic tanks pose an even greater threat to water quality and marine ecosystems.

[55] Treva Wurmfeld, interview with author, April 7, 2021.

Figures 9. Scenes from Greenport's working waterfront circa 1932: A truck unloads oysters to be culled mechanically. Courtesy of Paul Kreiling and the East End Seaport Museum & Marine Foundation

PART THREE: WHERE IS THE TRUSTEE?

Suffolk County's renewal of the aquaculture leasing program supports the commons' perpetuity and water laborers (who do this labor for them), but the vast amount of pollution from outdated septic tanks show that the government is not doing enough to defend the commons. In the last fifty years, cheaply constructed cesspools poured millions of pounds of nitrogen into the Peconic Estuary.[56] Both private construction and government infrastructure cut corners on environmental standards with cheap materials, causing considerable ecological damage to the

[56] Cameron Engineering & Associates, LLP. "Peconic Estuary: Water Quality Status and Trends." (Suffolk County Department of Health Services Division of Environmental Quality, November 2012), 7-5. https://www.peconicestuary.org/wp-content/uploads/2017/06/PeconicWaterQualityStatusandTre.pdf

public trust. In 2012, a county commissioned study reported that an average of 5.4 million pounds of nitrogen enter the Peconic Estuary each year, about less than half of which comes from human activity and agriculture runoff.[57] This hyper concentration of nitrogen sparks harmful algal blooms, which dramatically reduce dissolved oxygen levels in the water. These toxic clouds create dead zones void of marine life and have the potential to shut down recreational and commercial activity in the bay. Even oysters, whose ability to filter and remove nitrogen from the water column cannot survive such conditions. Rust tide, in varying intensity and duration, poses a consistent and widespread threat to oyster farmers each summer.[58] In 2014, Suffolk County announced its first major sewering construction and improvement project in more than thirty years. The project, budgeted at $383 million, will reduce nitrogen runoff by connecting the sewage systems of approximately 10,000 properties.[59] The commons model leaves caretaking of the public trust to the government, but the "trustee's" thirty years of neglecting sewage systems casts doubt on whether its management is sufficient. While preserving water quality is now the county's top priority, investment now does not undo decades of ignoring this gaping issue. Interestingly, Suffolk County enacted the aquaculture leasing program four years prior to its sewering project. This act could be considered an attempt by the government to outsource the caring for the commons to oyster farmers. In any capacity, the underlying threat to the Peconic Estuary is not merely nitrogen runoff but the disregard for natural resources that allows the pollution to occur.

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[57] Ibid.
[58] Wise, William. "Suffolk County Harmful Algal Bloom Action Plan." New York Sea Grant; Suffolk County, September 2017, 26. https://reclaimourwater.info/Portals/60/docs/HABActionPlan.pdf.
[59] "Suffolk County Comprehensive Water Resources Management Plan - Section 8: Wastewater Management," March 2015, 8-11. https://www.suffolkcountyny.gov/Portals/0/FormsDocs/Health/EnvironmentalQuality/ComprehensiveWaterResourceManagementPlan/Section%208%20Wastewater%20Management.pdf.

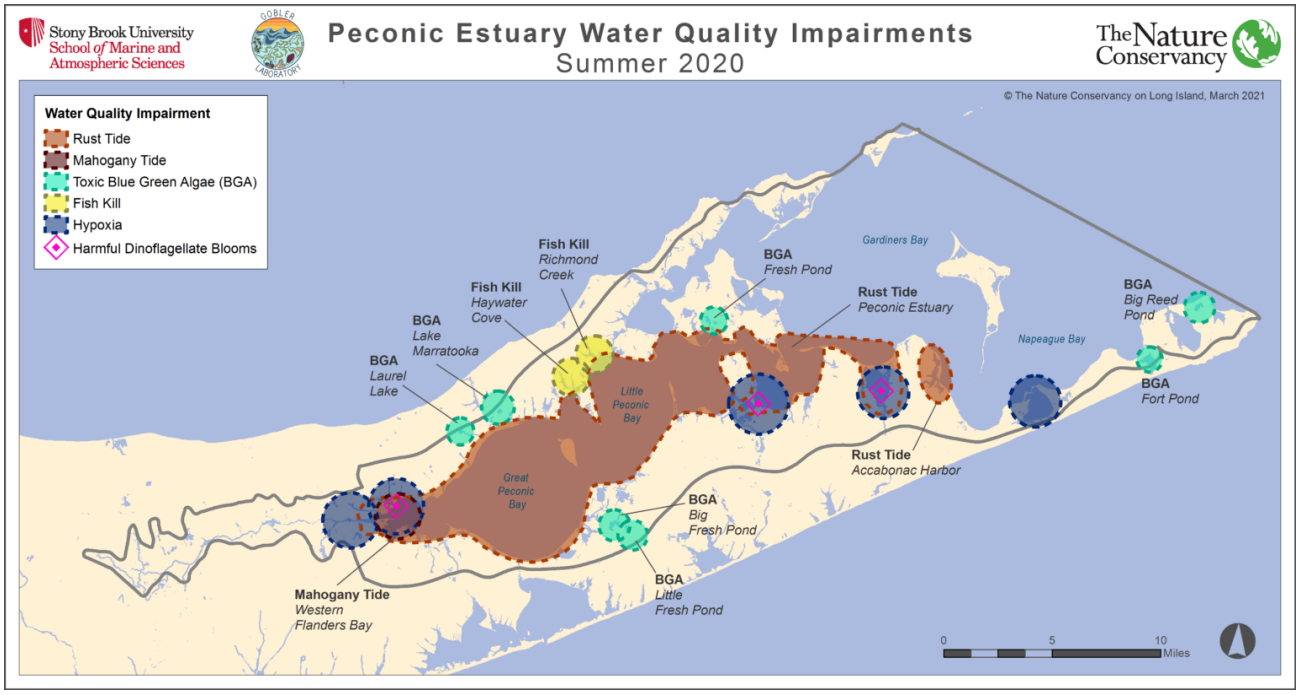

Figure 10. Rust tide is the most prevalent threat to the Peconic Estuary.[60]

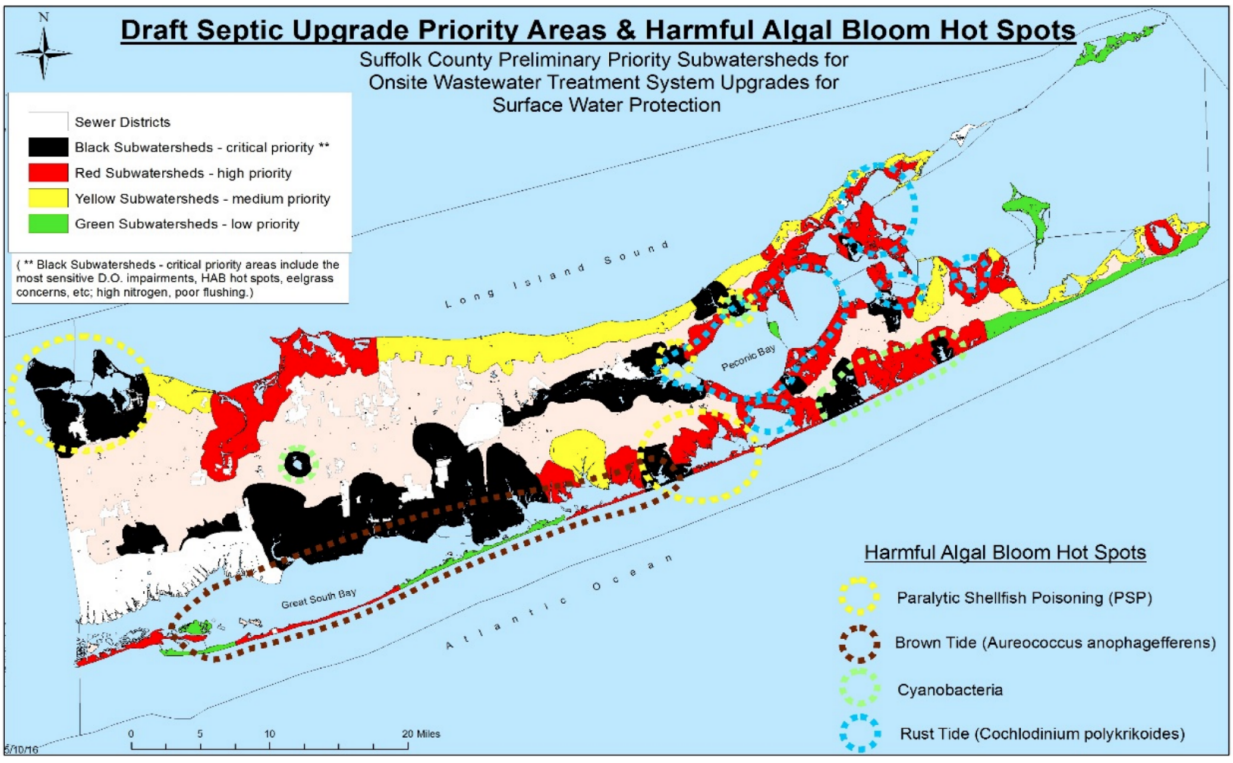

Figure 11. Map depicts priority areas for sewering updates and algal bloom hot spots.[61]

[60]"Peconic Estuary Water Quality Impairments." Stony Brook University School of Marine and Atmospheric Sciences, Summer 2020. https://www.peconicestuary.org/peconic-estuary-water-quality-report/.
[61] Wise, William. "Suffolk County Harmful Algal Bloom Action Plan," 39.

Even though oyster farming protects and supports marine ecosystems, the commons model produces a larger threat: a system which allows humans to divorce themselves from the natural environment. Oysters are often cast off as environmental saviors for polluted estuaries. Indeed Long Island oysters removed an impressive 192,182 pounds of nitrogen and 57,382 pounds of carbon from the waterways in 2019.[62] However, Shane Weeks, a member of the Shinnecock Indian Nation on the South Fork, believes oyster farming does not get to the root of the pollution problem. Weeks, who worked for the Shinnecock's shellfish hatchery from 2006-2009, views oyster farming like putting a "bandaid" on a "huge arterial wound."[63] Without fixing nitrogen runoff from cesspools, he says, oysters help water quality, but they are not a cure. General disregard for freshwater and the bays manifests in both shoddy infrastructure and attitude. The commons model is rooted in European colonizers' extractive relationship with natural resources. The model entitles the public into believing that the waterways exist for their personal benefit. Americans "mined the wealth" from the seas and then polluted them. The hyperconsumption of and disregard for natural resources, so intrinsic to the development of the East End, have turned the Peconic's pristine waters into hazardous dead zones. There needs to be a change from the extractive commons model to a symbiotic relationship between humans, the marine species, and the water.

CONCLUSION

The ten year review-turned-battle has left LIOGA members exhausted, but there is still hope that the hostility can give way to a positive reconstruction of relationships between the different parties and the ecosystem. Karen Rivara hopes in the future that "when people access

[62] LIOGA. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program."
[63] Shane Weeks, interview with author, April 28, 2021.

the estuary or build their second homes, they know that everything they do on land affects the water."[64] Rather than humans bending the environment to our will, we must see ourselves as embedded in our local ecosystems. This view entangles social and environmental relationships. Additionally, Rivara hopes that bay users become more appreciative of the fact that people are out on the water making a living and respect shellfish farms which take up less than 1% of Peconic Bay. Overall, Rivara hopes that Americans develop a deeper rooted cultural appreciation for natural resources. SCALP detractors and oyster growers should be united by a shared investment in the health of the bay, but the commons model creates too much contestation. It distracts them with conflicts of usage while pollution ultimately threatens the entire system. There needs to be a priority switch from self interest to the longevity of Peconic Estuary, which undergirds both groups' industries as well as the culture of the East End. Humans must be de-centered in order to tackle bigger issues like nitrogen runoff and climate change. When we see ourselves as part of an ecological web, care for other human and non-human life/ecosystems, and respect that they have their own agency, then East Enders can form relationships based on mutual respect and work better together against various challenges. The next chapter explores what these concepts look like in practice. SCALP's ten year review inflamed pre-existing socio-economic tensions and spotlighted the limitations of the commons model. In the words of Peconic Pearl's Melanie Douglass, "The big question of the moment is how can we all coexist?"[65] Luckily, North Fork oyster farmers are already demonstrating an alternative model of sociality around natural resource management. It is called "the cooperative."

[64] Karen Rivara, interview with author, February 9, 2021.
[65] Melanie Douglass, interview with author, January 26, 2021.

CHAPTER TWO: THE COOPERATIVE

FORGING A WORKING WATERFRONT

This chapter delves into the ways oyster farmers relate to other people on the Peconic Bay and on land under a collaborative and cooperative model. Dependent on inclusive and mutually beneficial relationships, it spotlights the human-human or interpersonal relationships forged by baymen and commercial oyster farmers as they work together to salvage a working waterfront in the face of increasing economic hurdles. The commons fuels contestation because individuated stakeholders butt heads over competing interests. The cooperative allows for each member to exercise their agency as business owners but requires collaboration for their success and longevity. The practice invites traditional baymen and newcomers like oysters farmers Melanie Douglass, Elizabeth Peeples and Stefanie Bassett into conversation with each other. Despite their differences in gender and experience, the parties know they are stronger when they work together. These water laborers have serious difficulties finding and affording space to work on land. Joined by intertwined social and environmental goals, they create “hubs” where they share space, equipment and knowledge. These collaborations, as seen in practice at Alice’s Fish Market and the Shellfisher Preserve exhibit just some of oyster farmers' creative solutions to the increasing cost of living on the North Fork. As both an oyster farmer and special education teacher, Melanie Douglass witnesses her community’s economic struggle to work and live on the East End. Oyster farmers’ mutually beneficial practices restore and strengthen relationships with other water laborers, defend the perpetuity of the commons and working waterfront, ultimately serving their greater community.

The growers behind Peconic Pearls and Little Ram Oyster Co. approach “bringing back the New York oyster” with the attitude of the cooperative. In the nineteenth century, New York

Harbor and Long Island's oyster beds were leading contributors to the world's oyster supply. From the ashes of the midcentury, the oyster industry is rapidly resurging. In the last ten years, growers like Melanie Douglass, Stefanie Basset and Elizabeth Peeples have contributed to 177% increase in oyster harvests for New York State.[66] The three women believe that each farmer benefits from their peers' success. The strategy focuses on local success: the better the product produced from the Peconic Estuary, the more people will want to buy oysters from that area. Industry newcomers like Bassett and Peeples, who are in their third season, came to the work out of a desire to improve the health of their local ecosystem. Basset continued, "I think the best thing about our industry is that every farmer wants more farmers out there," tending to oysters who in turn support marine life in the estuary. When asked if more farmers meant more competition, she parried, "The joy of eating an oyster is not eating the same one." Even farms spaced a hundred yards apart can taste differently due to water flow and mineral density. As for oversaturating the market, the proximity of New York and Boston means there are plenty of places for everyone to sell their product. Douglass added, "We all have different brands that we are proud of and we come together and help each other constantly." For example, when the pandemic closed, oyster farmers had to reorient their business to direct consumer models. When Douglass had to ship oysters through FedEx for the first time, Bassett and Peeples gave advice on which bags and containers to use. This commitment to mutual success and bettering their local ecosystems come together to form a spirit of the cooperative. Yet, when the three women arrived on the bay, they found their presence was not welcomed by other water laborers.

Women oyster farmers' initial encounters with traditional baymen reveal a hesitance to accept these new actors as "baywomen" and expose gendered divisions on the waterfront. When Douglass entered mariculture, her first company was hesitant to hire her; believing that because

[66] LIOGA. "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program."

she was a woman, she would not be strong enough to lift equipment or keep up with the work. Twenty years ago, when the oyster mariculture began to gear up again, Douglass remembered an unease between the oyster growers and wild catch baymen that came from not knowing what to expect and not knowing the other's intentions. The baymen, she said, "weren't sure if we were going to take wildstock. They had no experience with us. I think they were leery seeing all these new people come out on the water, calling themselves bay-women and men."[67] As outsiders, women, and a lesbian couple, Bassett and Peeples were uncertain as to how they would be received into their new industry. They moved to the North Fork with a desire to put down roots, idealistic about their new vocation. Out on the water, however, their friendly gestures received skeptical looks from baymen. During their first season in 2017, Bassett recalled that as women, they had to prove themselves. "We got side eyes like, 'They'll only be out for a year if they make it. This is just a hobby for them.'"[68] All of these encounters reveal a resistance to accept women's entrance into the working waterfront. The terms "fishermen" and "baymen" themselves masculinize the marine vocations. For baymen facing the end of their industry, these newcomers on the water suggested further changes to their working waterfronts. Their initial skepticism caused a gendered division in the commons but fortunately, this antisocial, even sexist, behavior did not last long. As the women of Little Ram and Peconic Pearls established their farms and continued through their seasons, the baymen ventured closer and friendships began to form.

Oysters' ability to jumpstart micro ecosystems acted as a social bridge between baymen and oyster farmers. After standoffish first encounters with fishermen, Douglass and Bassett began to notice them lingering on the periphery of their farms. The fishermen realized that the oyster and their cages, by filtering water and creating habitat for marine fish, were increasing the

[67] Melanie Douglass, interview with author, January 26, 2021.
[68] Stefanie Bassett, interview with author, January 28, 2021.

biodiversity of their ecosystem and providing better fishing conditions. Little Ram's ten acre farm is located in Gardiner's Bay on the east side of Shelter Island. Their SCALP allocated plot resides in waters known as "Bunker City," named for its historical abundance of menhaden, the fish that fueled an economic "boom" in the late nineteenth century. In the three years since Little Ram's farm started operating, fishermen in Bunker City noticed increased biodiversity in their catch—not just the usual menhaden or conk but also porgy, scallops, lobsters, and eel. As the backbone of this thriving ecosystem, the oysters invited their farmers and baymen into conversation and later friendship. Bassett now looks forward to fun exchanges with older baymen on the water and knows she can always radio them if she needs assistance. Douglass also reported a positive relationship with the baymen who set their conk pots near her farm. Oyster reefs enhance their ecosystems and encourage mutually beneficial interactions between humans. Additionally, oyster growers' positive contribution to their ecosystem directly benefits fishermen who struggle to make ends meet on wild catch. And so, rather than shun these new "baywomen," fisherman began to look to these new actors as potential collaborators and friends. While the fishermen of the past century "mined the wealth" of the seas without hesitation, contemporary fishermen must be careful to protect the little wildstock that remains as well as oysters, their ecosystem engineers. Oyster growers and baymen approach the waterfront with distinct mindsets — one hunter, one farmer — but they share a common interest in protecting the estuary health to sustain their livelihoods. Rather than perpetuating the exclusivity and hostility of the commons model, the two groups formed a symbiotic sociality on the water. This practice opened the door for further collaborations on land.

North Fork water laborers' shared workspaces embody the spirit of the cooperative and demonstrate their commitment to making a viable working waterfront in the face of increasing

economic hurdles. The North Fork's surge in popularity as a tourist destination has skyrocketed the cost of land. In 2016, Sotheby's Realty reported waterfront homes on Long Island Sound or Peconic Bay typical pricing from $2 million to $10 million with middle of the market options ranging from $750,000 to just under $2 million.[69] In the recent past, two dozen federally permitted trawlers populated Greenport's docks and supporting infrastructure like ice houses, marine services, and processing facilities marked its waterfront.[70] Today the same area is filled with restaurants, boutiques, and tourist shops. These changes mean that fishermen and oyster farmers struggle to find places they process their product, store their gear, and access their grounds in the bay. The two groups have come together to form "hubs," to share resources, space, and knowledge for individual and collective benefit. This "ingenious and eminently sensible" method relies not on full privatization or authoritarian government regulation of resources, but common goals, communication and teamwork.[71] The hubs at Alice's Fish Market and Shellfisher Preserve exemplify the cooperative in practice.

Alice's Fish Market is one of the standing last pillars of Greenport's bygone fishing era, but it also serves as a hub for baymen and oyster farmers revitalizing the working waterfront. The Phillips family, who owns and operates the fish market, permit Karen Rivara of Aeros Cultured Oysters Co. to keep several flupsies in their marina. Bassett and Peeples also began benefiting from renting space at Alice's Fish Market in this past year. They previously did all of their tumbling and sorting on the water, but as they made plans to expand their farm, their barge was not large enough for the crew they needed. Their new space at Alice's Fish Market, complete with a tumbler and sorting table makes it more efficient to get outside help and provides easy access to the bay when they need to move product back and forth from the farm.

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[69] Sussman Fischler, Marcelle. "Brooklyn on the North Fork."
[70] Wick, "Capt. Mark Phillips and the Illusion, the Last of Its Kind."
[71] Harvey, "The Future of the Commons," 102.

Peeples explained that this overlap and integration of the marine and mariculture industries is critical to their survival. The future of Long Island's working waterfront rests on this alliance between water laborers as they persist in an increasingly desirable zip code. These collaborations are also part of a larger local movement to create "hubs." During interviews in January, Douglass, and Bassett confirmed that a subgroup of the Long Island Oyster Growers Association (LIOGA) were preparing for discussions on working cooperatively on the North Fork. This collaboration also reveals an increasingly interconnected social web committed to ensuring the viability of the working waterfront.

The creation of Shellfisher Preserve in Southold exhibits oyster farmers' resistance to overdevelopment and dedication to the longevity of their industry. The preserve's fourteen acres formerly belonged to the Plock family, who operated Shelter Island Oyster Co. out of the site beginning in 1935. When a variety of circumstances forced the family to auction off the land in the 1980s, rather than sell it to a developer, the Plocks decided to preserve the land and their family legacy by donating it to the Peconic Land Trust. Debi Plock said that her family's choice comes in part as a rejection of the North Fork's increasing overdevelopment. She explained, "People get too caught up in the money."[72] And while her family could have gotten much more money if they sold to a developer, she believes that "As a community, people need to look towards the future, not just a quick buck right now."[73] She hopes that her family's contribution will ensure the perpetuity of oyster cultivation on the preserve. And indeed, their donation is a gift that keeps on giving. The protected land maintains the health of the environment and supports today's small scale oyster farmers who use the same inlet, covered barn, and mariculture facility as the Plocks once did.

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[72] Hirschfeld, Alec. *Out Here in the Fields: Shellfisher Preserve.* Video, 2009.[5:45-5:50]. https://vimeo.com/107504287.
[73] Ibid, [10:28-10:33].

The companies based in Shellfisher Preserve further help each other by sharing equipment, working collaboratively, sharing product and knowledge. Peconic Pearls, Aeros Cultured Oyster Co. and Southold Bay Oysters all operate out of Shellfisher Preserve. The companies' founders, Karen Rivara, Melanie Douglass, Dave Daly and Ben Gonzalez are all members of the LIOGA and the Noank Cooperative, a cohort of New York and Connecticut oyster growers who share space and resources. While the three companies rent different spaces from the Peconic Land Trust, their proximity makes it easy to share the use of a culling machine. Farmers benefit from increased efficiency without the added financial burden of this expensive piece of machinery. They also supply each other with additional product when one person falls short on an order for a distributor, restaurant, or retail sale. Douglass explains, "We each have our individual contracts, but if Dave says, 'I have an order this week and I'm short a hundred oysters.' I can say, 'Yeah, I got them. Here you go.'"[74] The companies maintain room for autonomy, while providing ample support. This team work is a stark contrast from the non communicative and self interested exchanges under the commons model. Rivara hopes one day that the mariculture center at Shellfisher Preserve will host events like oyster tastings and lectures on marine stewardship. This desire to educate and invite the larger community further demonstrates the inclusive nature of the cooperative. Unlike the exclusionary commons, the hub is shared by workers and visitors alike.

[74] Melanie Douglass, interview with author, January 26, 2021.

Figure 12. Karen Rivara gives visitors a tour of Shellfisher Preserve. The blue barrel she holds on the lower right is used in a floating upwelling system (flupsy).[75]

In addition to her work as an oyster farmer, Melanie Douglass serves her community as a special education and science teacher at Greenport High School. Both of these jobs provide different lenses through which she witnesses and addresses challenges within the community. In 2020, she navigated the difficulties of teaching during the pandemic and the contentious ten year review of the Suffolk County Aquaculture Lease Program. For her, the two spheres of work do not typically overlap, but one year she had the opportunity to teach marine biology. Her unit on mariculture culminated in a lesson on shucking oysters, clams, and scallops. When she told her students the sizeable wage they could make shucking oysters, she remembered the enthusiasm and focus they brought to the activity. Douglass explained, "In Greenport, we have a low

[75] Qiu, Julie. "North Fork Oyster Farms Tour." In A Half Shell. Accessed May 14, 2021. https://www.inahalfshell.com/journal/north-fork-oyster-farms-tour.

socioeconomic status, about 90% of our kids are on free and reduced lunch."[76] The town's reputation as a tourist destination often overshadows the needs of the year-round community who work in restaurants and other seasonal services and struggle to make ends meet. Oyster related work like shucking provides an opportunity for students from low/mid socioeconomic statuses to earn a living and save for college. While a great summer gig, if shucking is one of the better opportunities, it shows the limitations of the system young people are living in. As of spring 2019, Greenport High School's graduation rate was sixty percent compared with a statewide rate of eight-three percent, suggesting that economic challenges interfere with students' ability to succeed academically.[77] There is much to be done to support the working class on the East End. Infringing leisure culture, only exacerbated by the pandemic, has generated an affordable housing crisis. As communities in Suffolk County try to enact plans to construct more affordable housing, the wealthy and working classes clash in arguments similar to those between the SCALP Reform Task Force and oyster farmers. While second homeowners benefit from the service industry, the labor force that powers it is pushed to the margins.

The cooperative model strengthens, rather than ensnares the social web of water laborers on the East End. While the commons model puts different land and bay users in conflict with one another, the cooperative offers a way to unite through shared interests in the perpetuation of the commons and economic success. The team of commercial oyster growers show that environmentalism and capitalism can work together. Water laborers unite because they both have a financial stake in the working waterfront. The cooperative purposefully allocates space for each business' autonomy while keeping in mind big picture environmental interests. Realtors pose a threat to this alliance because they do not have an investment in climate change or the working

[76] Melanie Douglass, interview with author, January 26, 2021.
[77] Benzel, Jan. "Orient, N.Y.: A Historic Hamlet With a Low-Key Reputation." *The New York Times*. March 31, 2021. https://www.nytimes.com/2021/03/31/realestate/living-in-orient-ny-historic-hamlet-low-key.html.

class. They advertise the “working waterfront” or maritime culture of the North Fork even though their selling second homes undermines the practitioners of this “quaint” identity. Compartmentalizing the landscape from the peoples and historical processes that shape it skews public understanding of who we are and how we got here. Extractive relationships with nature have caused the world’s most pressing challenge yet: climate change. In the next chapter, oyster farmers use the cooperative model to make national strides on locally felt issues.

CHAPTER THREE
BUILDING A NATIONAL MOVEMENT

After a hot morning of tumbling on the farm last August, Will, Sascha and I boarded the West Robins skiff and set for North Sea Harbor. As we sped across the bay, there was little talking over the grind of the motor and the wind. Will gestured to a patch of water about a hundred yards away and shook his head. Rust tide, he shouted. I squinted at the water, trying to see as he saw. The reddish cloud was probably the size of a basketball court although from the moving boat it was difficult to tell. I'd never heard of rust tide before, but the sound of it made my heart sink. I later learned these amorphous swaths, caused by increased temperatures and nitrogen concentrate, suffocate marine life by consuming dissolved oxygen. We were less than half a mile from the farm, what were the odds that it would harm the oyster cages?

Fortunately for both the West Robins' crew and oysters, our cages are positioned at the intersection of several fast moving currents which would minimize exposure to the rust tide. Farms in other corners of the bay would not be so lucky. More stagnant waters allow the algae to sit and smother several seasons of product and labor.

Our changing climate poses an ever growing threat to life and livelihoods around the world. On the East End, pollution and warming waters have turned algal blooms into annual occurrences, but changes are happening up and down the Atlantic, Pacific, and Gulf coasts with rising sea levels and increasingly intense storms. Stories like my own exemplify the way oyster farmers witness the impacts of climate change in their micro ecosystems. Such testimonies are being collected by the Shellfish Growers Climate Coalition (SGCC). Facilitated through the Nature Conservancy, the SGCC lobbies in Washington, D. C. for federal action on climate. They use storytelling as a method of engaging people to think critically about human's impact on the water. Given shellfish growers' intimacy with their estuaries and their animals, they serve as the

canaries in the coal mine when it comes to the health of our oceans. What is possible if all these calls of warning came together? Inspired by this potential, Sarah and Steve Malinowski of Fishers Island Oysters and four other shellfish farmers formed the Shellfish Growers Climate Coalition in 2018. Today, more than two hundred members in 23 states are leveraging their political power and amplifying their stories through coalition building.[78] The SGCC's recruiter, Call Nichols[79] has spent the last two years driving across the country, visiting shellfish growers and using work with oysters as a vehicle around which to organize for climate action. By straddling geographic and political differences, the coalition restructures American narratives surrounding environmental regulation and the economy. Similar to the collective model on the local scale, the SGCC intertwines shellfish growers' mutual social, economic, and environmental goals. The coalition works not only to defend the perpetuity of the oyster industry and their estuaries, but ultimately recast the characterization of farmers in the United States. The SGCC's principles and methods demonstrate a movement committed to changing American relationships to the water from extractive to mutualistic.

The SGCC employs storytelling and lobbying to demand federal action on climate change and asserts that environmental regulation is good for the economy. Their story series called "Heard on the Halfshell" gives coalition members a platform to voice climate change's impacts on their businesses. In these short audio clips, shellfish growers personalize the climate crisis and make it less overwhelming. These stories also engage the public, getting them to care and reflect on their own ecosystems. Since its founding, the SGCC has lobbied in Washington

[78] The Nature Conservancy. "About the Shellfish Growers Climate Coalition." Accessed May 14, 2021. https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/shellfish-growers-climate-coalition/#link01.

[79] Call Nichols was introduced to oystering with the Malinowskis in 2013. Two years working at Fishers Island provided Nichols with a "crash course in all things oysters." For some, the coalition is a way of strengthening previous friendships. After striking out on his own for six years, Nichols found himself working with the Malinowskis in a new iteration: lobbying in D. C. with the coalition.

DC three times. Due to the pandemic, the most recent "fly-in" occurred virtually in March. Coalition members like Will Peckham met with their congressional representatives to urge an economy-wide tax on carbon emissions, restore natural ecosystems, and modernize the electrical grid.[80] Shellfish growers crucial ecosystem work can only be done if their livelihoods are economically viable. Oysters create healthier ecosystems, but only if these ecosystems are baseline habitable. And so, in seeing this intrinsic relationship between business and healthy ecosystems, the coalition pushes against the narrative that environmental regulation will eliminate jobs. The SGCC's head of member recruitment Call Nichols explained, "Our argument is any lack of regulation on climate is going to impact and already has impacted the jobs and economies that we support." This perspective is a powerful alternative to the extractive industries that have previously defined the United States economy.

Working with oysters functions as a social bridge for shellfish growers divided by geographical and political differences. As he road trips across the United States to recruit new members to the SGCC, Call Nichols interacts with a diverse set of oyster farmers with varying experiences in aquaculture. From fifth generation shellfish growers like the Taylors, to the Malinowskis with four decades of experience, to six month old companies, he knows that all voices have something to contribute to the coalition. However, these geographic regions pose different cultural and climate-related hurdles. Growers' livelihoods depend on being attuned to changes in their estuary, but Nichols notices that shellfish growers can disagree on whether action needs to be taken in response. Some shellfish growers' conservative identities can make the coalition's goals feel uncomfortable, but Nichols uses this proximity to oysters as "a vehicle for creating common ground around addressing climate change." Especially in the South, oysters act as a social bridge between growers who want to enact change now and those who are

[80] The Nature Conservancy. "About the Shellfish Growers Climate Coalition."

hesitant. Nichols believes ardently that “we need everybody” in the fight against climate change. The ranging conservative and leftists identities of coalition members reflect the importance and expansiveness of their work.

The Shellfish Growers Climate Coalition hopes to redefine farming’s role in the United States and ultimately reconstruct the way Americans relate to the marine environment from extractive to sustainable. Aquaculture in the United States is relatively undeveloped compared to industrial agriculture. While farmers’ noble characterization is a cherished part of American identity, the land clearing of the colonial era and the industrial scale monocropping in the centuries after have catastrophically impacted our environment. Call Nichols gets infuriated when he hears people propose that we as a nation should farm the seas like we farmed the land. The burgeoning aquaculture industry offers a chance to redefine what farming means. Nichols explained, “The opportunity for us is not to aspire to what has already happened in agriculture but to develop a new standard of food production that we can hopefully export to other industries.” Even while the act of oyster farming (tumbling, culling, etc.) is specific to the animal, the ethos around this farming — the spirit of the cooperative — is a model that should be shared and replicated. Restructuring the American’s relationship with the marine ecosystem from one of human dominance to symbiosis gives us a fighting chance at survival during the climate crisis.

EPILOGUE

Shellfish growers around the country are building thoughtful, engaging and mutually beneficial relationships with marine ecosystems and fellow human beings. The cooperative model offers a better alternative to extractive and individualistic approaches to natural resource management. Amid a pandemic and increasing economic hurdles, oyster farmers continue to forge a powerful social network to protect their livelihoods. But as threats from climate change compile, is the burgeoning oyster industry just a blip in time? On the North Fork, will infringing leisure culture from second homeowners push all water laborers out of their communities? Will toxic algal blooms turn the Peconic Estuary into a dead zone? East End oyster growers' cooperative practices suggest not.

The farmers of West Robins Oyster Co, Aeros Cultured Oysters Co, and Little Ram Oysters, all members of the Shellfish Growers Climate Coalition, are committed to defending their estuaries and livelihoods on the local and national level. They view their oysters not as purifying sponges to nitrogen run-off, but as partners in our common survival. New York's polluted estuaries need oysters, but even more, they need New Yorkers to care for the commons. This care must be mutually beneficial and enhance our socio-ecological webs. As this new generation of oyster farmers strives to re-engage Americans with the marine ecosystem, let us heed their warnings and support their ambitions. After all, our future depends on it.

BIBLIOGRAPHY

"A Battle Builds for Robins Island." *The New York Times*. October 2, 1983, sec. 8. https://www.nytimes.com/1983/10/02/realestate/postings-a-battle-builds-for-robins-island.html.

Andrew Radel Oyster Company. *Robbins Island Oysters Promotional Pamphlet*. South Norwalk, Conn: 1935. Courtesy of Mariella Ostroski.

The Association of Marina Industries. "U.S. Marina Industry Economic Impact Study," May 2018. https://marinaassociation.org/files/AMIMEIS_FullReport_Final_05-2018_wAppendix(1).pdf#5.

Benzel, Jan. "Orient, N.Y.: A Historic Hamlet With a Low-Key Reputation." *The New York Times*. March 31, 2021. https://www.nytimes.com/2021/03/31/realestate/living-in-orient-ny-historic-hamlet-low-key.html.

Cameron Engineering & Associates, LLP. "Peconic Estuary: Water Quality Status and Trends." Suffolk County Department of Health Services Division of Environmental Quality, November 2012. https://www.peconicestuary.org/wp-content/uploads/2017/06/PeconicWaterQualityStatusandTre.pdf.

Cashin Associates. "SUFFOLK COUNTY SHELLFISH AQUACULTURE LEASE PROGRAM IN PECONIC AND GARDNERS BAY - TEN YEAR REVIEW." Digital. Peconic Bay: Suffolk County Department of Economic Development and Planning: Division of Planning and Environment, November 20, 2020. https://www.suffolkcountyny.gov/portals/0/formsdocs/planning/EnvPlanning/Aquaculture/Updated%201-25-21%20Proposed%20Lease%20Sites%20Map.pdf.

Dennis, Jeremy. "Fort Corchaug." On This Site. Accessed May 17, 2021. https://www.jeremynative.com/onthissite/listing/fort-corchaug/.

Dolgon, Corey. *The End of the Hamptons: Scenes from the Class Struggle in America's Paradise.* New York: New York University Press, 2005.

Fishers Island Oyster Farm. "The Future." Accessed May 17, 2021. https://www.fishersislandoysters.com/future.

Greenberg, Paul. *American Catch: The Fight for our Local Seafood.* New York: The Penguin Press, 2014.

Harrington, Mark, and Rachel Blindner. "Suffolk Lawmakers Approve New Aquaculture Leases, Rules." *Newsday*, March 2, 2021. https://www.newsday.com/long-island/politics/suffolk-oysters-aquaculture-1.50170045.

Harvey, David. "The Future of the Commons." *Radical History Review*, no. 109 (January 1, 2011): 101–7. https://doi.org/10.1215/01636545-2010-017.

Hirschfeld, Alec. *Out Here in the Fields: Shellfisher Preserve*. Video, 2009. https://vimeo.com/107504287.

Hoellein, Timothy J., and Chester B. Zarnoch. "Effect of Eastern Oysters (Crassostrea Virginica) on Sediment Carbon and Nitrogen Dynamics in an Urban Estuary." *Ecological Applications* 24, no. 2 (2014): 271–86. https://doi.org/10.1890/12-1798.1.

Holzapfel, John. "A History of the Oyster Industry on the East End." Zoom Lecture, Alone Together Virtual Lecture Series from Oysterponds Historical Society, Orient, NY, April 18, 2020. https://oysterpondshistoricalsociety.org/event/alone-together-virtual-lecture-series-a-history-of-the-oyster-industry-on-the-east-end/

Long Island Oyster Growers Association (LIOGA). "Support the Expansion and Continuation of the Suffolk County Shellfish Aquaculture Program." Change.org. Accessed May 17, 2021. https://www.change.org/p/suffolk-county-legislature-support-the-expansion-and-continuation-of-the-suffolk-county-shellfish-aquaculture-program.

LIOGA. "FAQ'S." Accessed March 17, 2021. https://www.liogany.org/faqs.

Kurlansky, Mark. *The Big Oyster: History on the Half Shell.* New York: Random House Trade Paperbacks, 2007.

"Managing Nonpoint Source Pollution from Boating and Marinas." United States Environmental Protection Agency. Accessed May 10, 2021. https://archive.epa.gov/water/archive/web/html/point9.html.

The Nature Conservancy. "About the Shellfish Growers Climate Coalition." Accessed May 14, 2021. https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/shellfish-growers-climate-coalition/#link01.

NY Sea Grant. "New Economic Report Identifies Keys to Long Island Growth in Tourism, Fishing.," December 2018. https://seagrant.sunysb.edu/articles/t/on-youtube-new-economic-report-identifies-keys-to-long-island-growth-in-tourism-fishing-marine-fisheries-resource-center-research-news.

Matthiessen, Paul. *Men's Lives*. New York: Random House, 1988.

Pawlik, Robert J. *Oyster Production in New York and Connecticut 1880-1972*. n.d. Shelter Island Historical Society.

"Peconic Estuary Water Quality Impairments." Stony Brook University School of Marine and Atmospheric Sciences, Summer 2020. https://www.peconicestuary.org/peconic-estuary-water-quality-report/.

People of the Town of Smithtown v. Povermo, (Suffolk County 1972) via "History of the Public Trust Doctrine." Fairfield Beach Access. Accessed May 10, 2021. https://www.fairfieldbeachaccess.org/history.

Salkin, Patricia E. "THE USE OF THE PUBLIC TRUST DOCTRINE AS A MANAGEMENT TOOL OVER PUBLIC AND PRIVATE LANDS." *Albany Law Journal of Science & Technology* 4, no. 1 (1994): 2.

SCALP Reform Task Force. "Letter to Legislators of Suffolk County," January 31, 2021. https://citizensofgardinersbay.org/wp-content/uploads/2021/02/scalp_oysters_ltr_amend_adminguid_i1981-20_210202.pdf.

Schaefer, Sarah. "Peconic Estuary: State of the Bay." *Peconic Estuary Program*, August 31, 2017, 28. https://www.peconicestuary.org/wp-content/uploads/2017/09/Peconic-Estuary-State-of-the-Bay-Presentation.pdf.

"Suffolk County Comprehensive Water Resources Management Plan - Section 8: Wastewater Management," March 2015.

https://www.suffolkcountyny.gov/Portals/0/FormsDocs/Health/EnvironmentalQuality/ComprehensiveWaterResourceManagementPlan/Section%208%20Wastewater%20Management.pdf.

Qiu, Julie. "North Fork Oyster Farms Tour." In A Half Shell. Accessed May 14, 2021. https://www.inahalfshell.com/journal/north-fork-oyster-farms-tour.

Rather, John. "Call It Modern Clamming, or Strip-Mining." *The New York Times,* March 26, 2000. https://www.nytimes.com/2000/03/26/nyregion/call-it-modern-clamming-or-strip-mining.html.

Seaver, Barton. *American Seafood: Heritage, Culture & Cookery From Sea to Shining Sea.* New York: Sterling Epicure, 2017

Sussman Fischler, Marcelle. "Brooklyn on the North Fork." *The New York Times*, May 6, 2016. https://www.nytimes.com/2016/05/08/realestate/brooklyn-on-the-north-fork.html?smid=url-share

Tully, Tracey, and Stacey Stowe. "The Wealthy Flee Coronavirus. Vacation Towns Respond: Stay Away." *The New York Times*, March 25, 2020, sec. New York. https://www.nytimes.com/2020/03/25/nyregion/coronavirus-leaving-nyc-vacation-homes.html.

Wick, Steve. "Capt. Mark Phillips and the Illusion, the Last of Its Kind." *North Forker*, September 5, 2018. https://northforker.com/2018/09/capt-mark-phillips-and-the-illusion-the-last-of-its-kind/.

Wise, William. "Suffolk County Harmful Algal Bloom Action Plan." New York Sea Grant; Suffolk County, September 2017. https://reclaimourwater.info/Portals/60/docs/HABActionPlan.pdf.

Young, Beth. "The Next Ten Years: Suffolk Seeks Feedback on Oyster Farms." *East End Beacon*, December 19, 2020. https://www.eastendbeacon.com/the-next-ten-years-suffolk-seeks-feedback-on-oyster-farms/.