

NANTUCKET

A photograph of a coastal landscape. In the foreground, there is a field of tall, golden-brown grasses. In the middle ground, a body of water is visible, with a line of trees and a small island or peninsula. The background shows a flat, grassy plain under a clear sky.

A NATURAL

HISTORY

Peter B. Brace

By the time Nantucket, Polpis and Madaket Harbors came into being, the Late Archaics and Wampanoags, having become proficient fishermen, had learned that most of the fish in which they were interested swam close enough to shore to be diverted into fish weirs they had built of small trees, saplings and branches, to be seined in their nets or to be speared. And they had learned to open the great salt ponds to the ocean to trap spawning herring, alewives and other anadromous fish, along with American eels, a practice they later taught the European settlers. In addition to edible mammals, birds and plants on land, these Indians found good sources of food in tautog, bluefish, cod, haddock, halibut, hake, flounder, mackerel, pickerel, white perch and yellow perch.

Of their expertise in catching cod, Andrews noted in his 1986 *Bulletin of the Massachusetts Archeological Society* article, "Indian Fish and Fishing Off Coastal Massachusetts":

The records of Nantucket's early settlers indicate that the Indians became very good codfishermen, but by that time they were fishing for trade, not for subsistence. The fact that large cod often stranded on the outer beaches in the fall complicates relating their remains in middens to prehistoric deep-sea fishing. A few vertebrae used as ornaments could have come from stranded fish. However, many early accounts tell that the Indians did use their canoes in the ocean, and we know that they went back and forth between Nantucket and the mainland on a regular basis.

To wit, for the many fish species including mollusks, their refuge from the developing subsistence and commercial fisheries out in Nantucket Sound and the ocean around Nantucket, and in Polpis and Madaket Harbors, had been shrinking at the hands of hungry Native Americans several thousand years before Nantucket settlers and their descendents entered the cod, whale and bay scallop fisheries.

But Andrews admits that nearly all of this historical fisheries information is speculative at best, because all there really is to go on is a combination of fish bones discovered in middens, vertebrae used as ornaments and the knowledge that local Native Americans had seasonal fishing encampments.

EVOLVING HARBORS

Although the islands' settlers engaged in open ocean fishing for cod and other saltwater fish for food and for profit from the earliest days of settlement, by far the two biggest events in the natural world of the harbors in terms of fisheries were the organic growth of the waterfront into the

whaling capital of the world and and white perch fisheries. Other ings to trap fish for food, two significant modifications to their sustenance: the altering of the w tions and later whaling, and the the construction of the jetties.

Where Water Tower Beach is t Pond was open to the ocean on 1722. The settlers also maintained rent town waterfront is now, calli at the eastern side of where the Harbor (the original name of Nar

During the last five or six years harbor, ending with the storm t tucketers were already transition around Wesko Landing on the slo; nal name, Sherburne, until 1795 w municipal area lay in between Q bank immediately behind today's along its upper edge from Main S Street, and the Cliff, the coastal Easton Street and Cliff Road out ing Pond.

Although Sherburne's town cer opment of the young waterfront that Joseph Coffin purchased the purchases in this area spiked in Straight Wharf pier was built. Th island's natural habitats, and th aside by the growing village.

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Madaket Harbors came into being, and they became proficient fishermen, which they were interested in. In the swampland, they built fish weirs of small fish traps in their nets or to be speared. They dug salt ponds to the ocean to trap migratory fish, along with American and European settlers. In addition to the land, these Indians found good haddock, halibut, hake, flounder, and perch. Brewster noted in his 1986 *Bulletin of the Nantucket Historical Association*, "Indian Fish and Fishing Off

indicate that the Indians became dependent on them for trade, and they often stranded on the outer shore remains in middens to preserve. Used as ornaments could have been seen in early accounts tell that the Indians, and we know that they went to the mainland on a regular basis.

Using mollusks, their refuge from commercial fisheries out in Nantucket Harbor and in Polpis and Madaket Harbors. Hungry Native Americans several times and their descendents entered

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HARBORS

In open ocean fishing for cod and haddock from the earliest days of settlement, the natural world of the harbors and the growth of the waterfront into the

whaling capital of the world and the growth of the bay scallop, quahog, eel and white perch fisheries. Other than the Native Americans' pond openings to trap fish for food, two actions were the island inhabitants' first significant modifications to their marine environment for commerce and sustenance: the altering of the waterfront in preparation for fishing operations and later whaling, and the stunting of the growth of Coatue through the construction of the jetties.

Where Water Tower Beach is today, off of Washing Pond Road, Capaum Pond was open to the ocean on the north shore until a storm closed it in 1722. The settlers also maintained landings in Madaket and where the current town waterfront is now, calling it Wesko (now spelled Wesco) Landing, at the eastern side of where the Wesko Hills gradually lead down to Great Harbor (the original name of Nantucket Harbor).

During the last five or six years of the shoaling of the mouth of the first harbor, ending with the storm that eventually closed it, the early Nantucketers were already transitioning to the new urban area of the island around Wesko Landing on the slopes of the Wesko Hills. Retaining its original name, Sherburne, until 1795 when it was renamed Nantucket, this new municipal area lay in between Quanty Bank, the high east-facing coastal bank immediately behind today's Union Street with Orange Street running along its upper edge from Main Street south down to where it joins Union Street, and the Cliff, the coastal bank stretching from the intersection of Easton Street and Cliff Road out to the private beaches in front of Washing Pond.

Although Sherburne's town center was moved to Wesko in 1673, development of the young waterfront on Great Harbor began around the time that Joseph Coffin purchased the 40-foot-wide Wesko Landing in 1716. Lot purchases in this area spiked in 1717, the year that the original wooden Straight Wharf pier was built. This meant that much of this part of the island's natural habitats, and the creatures using them, were elbowed aside by the growing village.

In the building of the town, some of the streets laid out and developed between a once-much-larger Lily Pond, with visible open water, and the vicinity of Children's Beach smothered an island tributary of Lily Pond that ran down to the harbor and was called Barzillai's Creek. According to the Land Bank, as this part of town was filling in with new streets and buildings in 1723, a girl named Love Paddock, digging with a clamshell on the eastern bank of this pond, cut a trench deep enough into this shore for the

pond's water to break through and wash in a torrent down to the harbor, demolishing her father's mill, uprooting fences and swamping a few boats in the harbor. What remains today of Barzillai's Creek is an outflow pipe in front of the Nantucket Yacht Club that drains the entire area into the harbor, including what's left of the Lily Pond, now overgrown with cattails and lacking any open water. And construction of India Street, originally dubbed Pearl Street, erased another creek or stream that ran from the countryside west of Wesko Landing, between old and new Sherburne, and likely entered the harbor near where the Dreamland Theater is today. Evidence of this erstwhile stream comes in two forms. A subdivision of what were to be small commercial lots known collectively as Bococho, were laid out roughly where the Dreamland property is today. Corroborating this reference are the results from test bores conducted in 2006 by Cape Cod Test Boring of Orleans at the edge of the South Water Street sidewalk in front of the Dreamland property. Found in the recovered bores were sand and pebbles believed to have come from the stream that once flowed down Pearl Street.

By 1720, Nantucket whale oil was being exported from Boston to London, and several years later, probably around 1723, whale oil was being shipped directly from Nantucket to major European ports. As the whaling port of Nantucket grew, so did this town on Great Harbor, and that growth demanded that the waterfront expand to include new streets and building lots. Years before Bococho was laid out in 1744, Richard Macy augmented the wood pier of Straight Wharf with a solid fill pier in 1723 to create an extension of Main Street. The divvying up of Sherburne's waterfront land and its ensuing development necessitated a great deal of filling in of tidal areas known as tidelands. Dominated by salt marsh cord grasses, eelgrass and other typical salt marsh and tidal area vegetation, tidelands exist in places all around the harbor today. Today they are known as the Creeks, Shimmo Creek, Folger's Marsh, Pocomo Meadows, Medouie Creek and the salt marshes around Haulover and Coskata ponds.

When Coatue stretched out to its fullest extent westward 2,000 to 3,000 years ago, the heavy ocean waves and strong tidal currents in the harbor gradually subsided, and the harbor became more sheltered, with regular but subdued tides. Sediments began to build up, and tidal lands were able to develop, with salt marsh vegetation growing where Nantucket's waterfront is today. Essentially, the Creeks habitat, interspersed with sandy areas just south of the Great Harbor Yacht Club on Washington Street Extension,

originally ran along the shore probably right along the edge of and, to a limited extent, along where the Cliffside Beach Club is of Nantucket's younger outwash Cape Cod Bay Lobe of the glacier against it at high tides before the Great Harbor.

When Sherburne became busy in 1730, which was part of these in the world, it was necessary to cut in some places, to get away from the of the excavated material to build used the rest of it to fill in several new street and the harbor along built. The infill of natural tidelands right up to the Cliff, from near Station Brant Point, where there time, to a salt marsh area mixed passed much of the land between Avenue westward to the Cliff. Y areas, on Easton Street looking north behind the Point Breeze Hotel and between North Beach Street and the intersection of Easton and North astronomical high tide, particularly how low this area is in elevation.

Continuing on from the 18th century tidelands, followed close behind until the waterfront we have today was completed. Nantucket Harbor form of harbor sand and mud from the years, including one in 1924, and the Nantucket Yacht Club and Harbor and another in 1929 that blanketed Beach, making it into a proper beach.

Over the years, human intrusion saltwater environment of the harbor

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originally ran along the shore from that southern end of the harbor and probably right along the edge of Quanaty Bank, all the way to Brant Point and, to a limited extent, along portions of the Cliff to somewhere south of where the Cliffside Beach Club is today. Quanaty Bank, like the Cliff, is part of Nantucket's younger outwash formed by meltwater from the retreating Cape Cod Bay Lobe of the glacier, and it likely endured the ocean breaking against it at high tides before the Haulover and Coatue grew and created Great Harbor.

When Sherburne became busy with the construction of Union Street in 1730, which was part of these major alterations to Great Harbor's natural world, it was necessary to cut into Quanaty Bank, as tall as 100 feet in some places, to get away from the soggy tidal ground. The town used some of the excavated material to build the foundation of Union Street, and it used the rest of it to fill in several acres of salt marsh areas between this new street and the harbor along which Washington Street was eventually built. The infill of natural tidelands included much of the Brant Point area right up to the Cliff, from near the location of today's U.S. Coast Guard Station Brant Point, where there was a tidal opening to the harbor at the time, to a salt marsh area mixed with sandy areas and dunes that encompassed much of the land between the beaches and dunes along Hulbert Avenue westward to the Cliff. You can see the remainder of these wet areas, on Easton Street looking north just past the White Elephant Hotel, behind the Point Breeze Hotel and in the backyards of many of the houses between North Beach Street and the Cliff. Anyone who has been around the intersection of Easton and North and South Beach Streets during an astronomical high tide, particularly during a storm surge, has witnessed how low this area is in elevation.

Continuing on from the 18th century, Nantucketers carried on filling the tidelands, followed close behind with street and structure construction, until the waterfront we have today along the west end of Great Harbor was completed. Nantucket Harbor's builders also used clean fill, in the form of harbor sand and mud from various harbor-dredging projects over the years, including one in 1924, which pumped its slurry on land between the Nantucket Yacht Club and Harbor View Way to make Children's Beach, and another in 1929 that blanketed the marsh and mudflats behind South Beach, making it into a proper beach of white sand.

Over the years, human intrusion pushed out over the sandy, muddy saltwater environment of the harbors into harbor life, continuing with the

construction of the wharves along Great Harbor, including Steamship, Old North, Straight, South and Commercial Wharves and eventually the town pier; two piers on the Monomoy shore; another out in Wauwinet; several that have come and gone on Coatue; the Nantucket Yacht Club's wharf and piers; the South Beach Boatyard; and the Jackson Point Pier, F Street Pier, and Hither Creek Boatyard in Madaket, as well as the various piers and docks on Tuckernuck. They displaced shellfish, smothered eelgrass and fouled the water with various forms of pollution from the growing human population on the island. Then as today, piers, docks and floats shade the sunlight from eelgrass beds, and the piers' once creosote-covered pilings further polluted the harbors. Gradually, man shoved his world out into the natural one of the harbor, filling wetlands and the harbor itself for more streets, buildings and infrastructure, constructing wharves and docks, and eventually building ships that would fill the harbor during the whaling days.

Well after Coatue had stopped growing westward, the same tidal currents that had formed a natural channel between harbor and sound conspired to close the Great Harbor as well, first causing problems in the first three decades of 1732, with a sandbar that probably grew in time with Coatue. The influx of sand from shoals just outside the harbor and the gradual choking off of its entrance by these ever-expanding and shifting sandbars became a major detriment to marine life and to the whaling commerce of the island. The culprit was the Nantucket Bar, a shoal extending from North Point, on the west end of the island, east almost to the Coskata end of Coatue. Much of the bar still exists today. The next time you're on one of the slow boats coming into or out of the harbor around low tide on a calm day when the water is fairly clear, look down into the water as you're passing out of the jetties or approaching them and look east or west, and you should see this sandbar. If you happen to be flying to or from the island during similar conditions, the bar will be plainly visible.

Now imagine it continuing across the mouth of the harbor and being less than eight feet below the surface at high tide, and then picture a massive schooner or whaling vessel—without the modern aids of radar or a global positioning system—trying to enter or exit the harbor during any tide other than high. For a visual representation of this problem, go down to Steamboat Wharf during the summer when the Steamship Authority's *M/V Eagle* has docked but hasn't been unloaded, and look at the numbers painted below its bow and stern, descending into the water. Each number represents

one foot, and the closest one to ferry draws (sits down in the water feet, six inches, so were the Nantucket be able to get into or out of the and passengers.

This was the forces-of-nature : eters grappled with for nearly a Jetties, after the sandbar had grown and other large ships from entering settlers likely chose the open Coatue reason, speculated Nantucket historian 1940 *Historic Nantucket* article, "Nantucket's first settlers, as shee establishing pasturelands for the protective anchorage and safe, relief. The need for the jetties became swelled. Whalers, when heavily : eight feet and were shut out. Eight ton ship built in Nantucket in 1 couldn't get over the Nantucket Bay and be offloaded by lighters, the infamous shoal in order to feversely, load outgoing ships with to the lighters came along in 1 wooden dry docks were partially ships to position above them, an ing the ship high enough to be t

Discussions and the ensuing increase harbor circulation by us tain a hole in the Nantucket Bar ears at the congressional level ur at a Town Meeting to petition C dredge a channel through it ulti and two town committees recor installed on either side of the ch in order to cut a channel through this idea in fear of its navigatio Jetties was approved by Congress

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one foot, and the closest one to the surface shows how much water the ferry draws (sits down in the water). Fully loaded, the *Eagle* draws about ten feet, six inches, so were the Nantucket Bar still in place, the *Eagle* wouldn't be able to get into or out of the harbor at high tide when full of vehicles and passengers.

This was the forces-of-nature reality of their new harbor that Nantucketers grappled with for nearly a century prior to the installation of the Jetties, after the sandbar had grown to the point of preventing whaleships and other large ships from entering the harbor. In fact, the island's original settlers likely chose the open Capaum Pond as their harbor for this very reason, speculated Nantucket historian Edouard A. Stackpole in his April 1940 *Historic Nantucket* article, "Nantucket Bar." Stackpole guessed that Nantucket's first settlers, as sheep farmers, were much more focused on establishing pasturelands for their livestock than worrying about a good, protective anchorage and safe, reliable access to and from boats and ships. The need for the jetties became evident as the island's whale economy swelled. Whalers, when heavily laden with whale oil, drafted more than eight feet and were shut out. Eight feet was the water displaced by a 118-ton ship built in Nantucket in 1732—without cargo. Incoming ships that couldn't get over the Nantucket Bar had to anchor in the Chord of the Bay and be offloaded by lighters, smaller vessels that could easily traverse the infamous shoal in order to ferry a ship's cargo into the harbor or, conversely, load outgoing ships with their voyage provisions. An alternative to the lighters came along in 1842: Peter Ewer's camels. These floating, wooden dry docks were partially flooded and sunk low enough to allow ships to position above them, and then the camels were pumped out, lifting the ship high enough to be towed safely into or out of the harbor.

Discussions and the ensuing machinations for building rock jetties to increase harbor circulation by using tidal currents to blow out and maintain a hole in the Nantucket Bar began in the early 1800s, but fell on deaf ears at the congressional level until 1874. A January 8, 1803, proposal made at a Town Meeting to petition Congress for funds to survey the Bar and dredge a channel through it ultimately foundered. Government engineers and two town committees recommended east and west wooden piers be installed on either side of the channel to increase the velocity of the tides in order to cut a channel through the Bar, when Town Meeting voters sank this idea in fear of its navigational hazards. Up until construction of the Jetties was approved by Congress and the U.S. Bureau of Engineers some

80 years later, numerous surveys were funded by Congress after being petitioned by various committees of concerned citizens, town officials and whaling business owners and lobbyists. Dredging of a channel through the Bar by steam dredge, after a Congressional appropriation of \$44,265.56 was secured, failed in June 1829 because the dredged channel filled in as fast as it was dredged.

Although the concept of building a breakwater of rocks or wooden piers on the west side of the channel arose in 1803, it wouldn't be until 1874 that Nantucket could agree on a solution and Congress, finally hearing a unified cry for help from the island, recognized that commerce through Nantucket Sound, which had increased to almost 30,000 ships annually, was worth its protection—and that these vessels required a harbor of refuge with no obstructions preventing their passage in and out when needed.⁷

The process of building the modern jetties began that year. Stackpole described their plan best:

The engineers' plan was the construction of a western jetty in the northerly direction from the beach, with a view of concentrating the ebb tide and scouring a channel through the Bar, which, at that time, was a half mile in width, with a ruling depth of about six feet at low water. By building the jetty out about a mile, it was thought the current would scour a channel to the required depth. If the deep water of Nantucket Sound could not be reached in this manner, it was thought that a jetty would have to be built from Coatue. This was ultimately done, becoming the present eastern jetty.

Workers for the jetty-building contractor F. K. Ballou of Boston, Massachusetts, dropped the first boulder of the west jetty on April 26, 1881, and completed the work in August 1884. During this three-year construction period, Nantucketers contributed by hauling glacial erratics from Quaise Pasture, Saul's Hills and other parts of the island and ferrying them to the growing jetty on barges. Nantucket scalloper Carl Sjolund's grandfather from Norway worked on the construction of this jetty after quitting the ship he worked once it arrived in New York City Harbor from Norway. According to Sjolund, his grandfather, Karl Sjolund, joined a crew that hauled much of this jetty's stone from Connecticut. Work on the east jetty began in the 1890s, shortly after Nantucket and the government's engineers realized that, although the west jetty did create some scouring action, a second jetty, extending out from Coatue, was essential to harnessing the natural dredging action of the tides to cut a deep channel

through the bar. Building it in sec & Company of New Haven, Conn jetty in 1910.

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through the bar. Building it in sections as the west jetty had been, Belding & Company of New Haven, Connecticut, completed the 4,885-foot eastern jetty in 1910.

While these currents did blast a channel through the bar, albeit more than a century too late, the Nantucket Harbor channel has required regular dredging to keep it 15 feet deep at mean low tide.

Ideas on how to enhance circulation in the harbors, other than building jetties and dredging out channels, included busting through the various barrier beaches and sand spits protecting the harbors. During the decades that Nantucket languished without its jetties, some Nantucketers floated the idea of opening the Head of the Harbor to the ocean through the Haulover, because they felt such an opening would fire up the velocity of the harbor tidal currents, causing it to plow more aggressively through the bar and gouge out the much-coveted deep-draft channel. Other islanders countered—and Peter Rosen agrees with this theory—that it would cause the harbor to fill in with shoals, with the six points of Coatue gradually extending southeast across the harbor and eventually forming six coastal ponds.

As I described in the first chapter of this book, the Haulover opened on its own in December 1896 during a winter storm. It remained open for 12 years, during which time fishing vessels used the opening as a shortcut to the fishing grounds east of the island.

In 1949, Nantucket, working with the U.S. Geological Survey, proffered the notion of digging a 300-foot-wide, six-foot-deep channel between the Head of the Harbor and Nantucket Sound, across Coatue northwest from Chatham Bend, to help clean out the shoals within the harbor, improve circulation and, they hoped, enhance bay scallop populations in the harbor. The USGS concluded that that the channel would significantly improve tidal circulation in the harbor but might do irreparable damage to bay scallops because it could suck out crucial nutrients and food required by the scallops to live. (The study also noted that scallops found in the Head of the Harbor have large shells but small abductor muscles and that the best scallops were found on the hard bottom near Wyer's Point.) The town never opened this channel between the Sound and the Head of the Harbor.

With the jetties in place, it was thought, shipping and boat channels would always remain open, because the force of the tides would only inhale fresh oxygenated salt water and marine animal food in the form of plankton and small fish, and exhale excess sand, toxic runoff, dead plants, dissolved carbon dioxide and unneeded nutrients. Instead, maintaining

the depth of Nantucket Harbor's channels, safe for navigation and the circulation at an optimal rate—currently, it takes 70 days to cycle the water out of the Head of the Harbor and replace it with fresh seawater—meant numerous dredging projects in the main channel, between Pocomo Point and Fifth Point, and in the Polpis Harbor channel in 1993. The town hopes to dredge a section of this channel's east side, currently filling in with silt, during the winter of 2012–2013. And the 1930s installation of a wide, V-shaped heavy timber bulkhead, or whaler, at the isthmus of Polpis Harbor's east and west lobes prevented the flood-tide-borne sand coming into that harbor from shoaling up the channel leading to the western part of Polpis Harbor. The Marine & Coastal Resources Department replaced that bulkhead in December 2006 because the original had fallen apart in the 70-odd years of its life.

And out in Madaket in 1977, the town considered the opposite of opening a channel through the barrier beach that connected the island to Esther Island in Madaket, which was opened by Hurricane Esther in September 1961, and recreating the namesake island. In their paper, "Nantucket's Broad Creek Opening," Wes N. Tiffney and Robert Benchley, III, detailed various ideas on closing this opening. Hurricane Gloria did the work for Nantucket on September 27, 1985, reattaching Nantucket with Esther Island, a.k.a. Smith's Point.

HARVESTING THE WATERS

From the time the first settlers arrived on the island through the travails building the harbor waterfront, developing the town, plowing out a navigable shipping channel and generally taming the island to their liking, they fed themselves from the surrounding waters. Starting in the 1870s, they began to deliver local seafood to mainland markets. They dug steamers, harvested oysters from the harbors and salt ponds, and likely found pockets of blue mussels to utilize as food. They also found an abundance of American eels, white perch and herring in Madaket Harbor, Long Pond and the other great salt ponds, which they almost certainly ate and sold locally. The harbors held quahogs, bay scallops, young winter flounder, striped bass, bluefish, crabs and lobsters.

Quahogs were plentiful in the new-formed Nantucket and Madaket Harbors, in sheltered water between Smith's Point and the south side of Tuckernuck in 1890, on the north side of this island and between it and Muskeget north of the Gravelly Islands, and in massive beds in Nantucket

Sound. They were a staple of the the European settlers, along with became another source of income of quahogs appeared in the lee c to the ocean, either intentionally. Such locations included Smith's ing past Muskeget, the beach co Haulover and some of the great :

In the early 1900s, Dr. David L. Belding, a geologist, was tapped by the Massachusetts Game Commission to study the state's shellfish stocks. He was joined by many Nantucket shellfishermen, including lobsters, quahogs and the other shellfish stocks during the period he conducted his study. Belding reported that Nantucket had about 300 acres of shellfish beds; the eastern end of the island, the western end of Tuckernuck and the Gravelly Islands, a population comprising mostly lit

There is scant specific historical record of quahogs by early humans on Nantucket. They were found in Indian middens at Madaket, and the Native Americans and as far as back as Andrews found that records began to be extended between the west end of the island. It tells it, the ocean water flowing into the harbor created eelgrass beds so dense that they had to be cut back to the Gravelly Islands and Muskeget to get them back to Nantucket and ship

By far the largest number of quahogs were harvested around Tuckernuck during this period. There was a fair amount in Nantucket Harbor, but the Haulover cut closed in 1908. The fishery was 90 strong. Many boats were used to harvest the beds in Nantucket Sound that were used for and catches were hauled from the boats on scott dories. It was around this time that the commercial quahog fishery. And it was important enough to call for some cc