

“Providence Brings to our Doors, the Delicious Treasures of the Sea”: Household Use of Maritime Resources in 18th-Century Connecticut

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Abstract

Many families in 18th-century Connecticut combined farming and maritime activities in their household economies. While they raised crops and livestock, they also caught fish, harvested shellfish, and hunted waterfowl and game animals in the rivers and along the coastline. Families made salt by boiling seawater in large kettles, used seaweed for fertilizer and insulation, and burned shells to extract lime to make building mortar. Much of this work was done by sharing labor, equipment and boats among family and neighbors. Simple boats, such as dugout canoes and scows, were commonly used. This paper uses archaeological data from five house sites excavated in Connecticut, and a variety of documentary sources, such as probate records, diaries, journals, and newspapers, to reconstruct historic household use of maritime resources.

Introduction

Connecticut’s inland waterways and off-shore saltwater bodies are known today as recreational beach and sport-fishing areas. Few Connecticut residents now make or supplement their living from maritime resources. But before over-fishing, the damming of rivers, and industrial pollution decimated the state’s fish and shellfish supplies, generations of families relied on Connecticut’s maritime resources for a myriad of uses in everyday life. This paper draws on historical documents and archaeological data derived from the excavation of five buried 18th-century European American sites to examine how colonial families used maritime resources in their household economies. The house-site excavations were conducted by Archaeological and Historical Services, Inc. for the State of Connecticut as part of legally mandated archaeological studies associated with state and federally-funded projects.

Fin Fish

Fish were a staple of the New England colonial diet and the demand for it was considerable. Laws attempting to license fishermen and regulate weirs and catches were issued throughout the 18th century. Except for those who made fishing a major part of their household economy, little if anything is indicated of fishing activities in probate records. The archaeology, however, tells a different story, with fishing tackle and fish remains recovered from buried house sites across Connecticut.

Unlike its neighbors to the north which had access to the Great Banks and rich cod fisheries, Connecticut never developed large commercial fishing industries in the 18th century¹. It was a simple matter of geography, the French Duc de la Rochefoucault Liancourt observed during a tour of Connecticut in the late 1790s:

As to the fishery, the places the fishes are taken, is such a distance, that the fishes

cannot be brought to New London to be dried. This business is carried on between the isles adjacent to the province of Maine, and the coasts of Labrador; but for ready sale, the fish is brought to New London, and thence to the colonies, and to New York or Boston.²

Fishing, however, was an important economic activity for many Connecticut families, who temporarily left their farms and trades to capitalize on the seasonal migrations of catadromous eels (fall), and anadromous fish such as shad and salmon (spring) that swam in the large rivers like the Connecticut, Thames and Housatonic and their tributaries. Fisherman also caught larger fish, like bluefish and striped bass, in large rivers and open water. From upland streams and ponds, small freshwater fish such as sunfish and sucker were caught. After a long winter, with food stores typically low, the early spring fish runs provided welcome opportunities to obtain fresh food before tilling and planting began. Farmers along the Quinebaug River knew that the shad would start running when the “shadwood” tree bloomed. For many of these small family-based ventures, fishing was not merely a subsistence-based activity; like their “country produce,” farmers hoped to sell their extra fish to local and distant markets. But to catch fish in great enough numbers for sale, equipment, salt, and cooperation were required.³

Ebenezer Story, who built a house on the east bank of the Thames River in Norwich (now Preston) in 1777, was one of these fishermen.

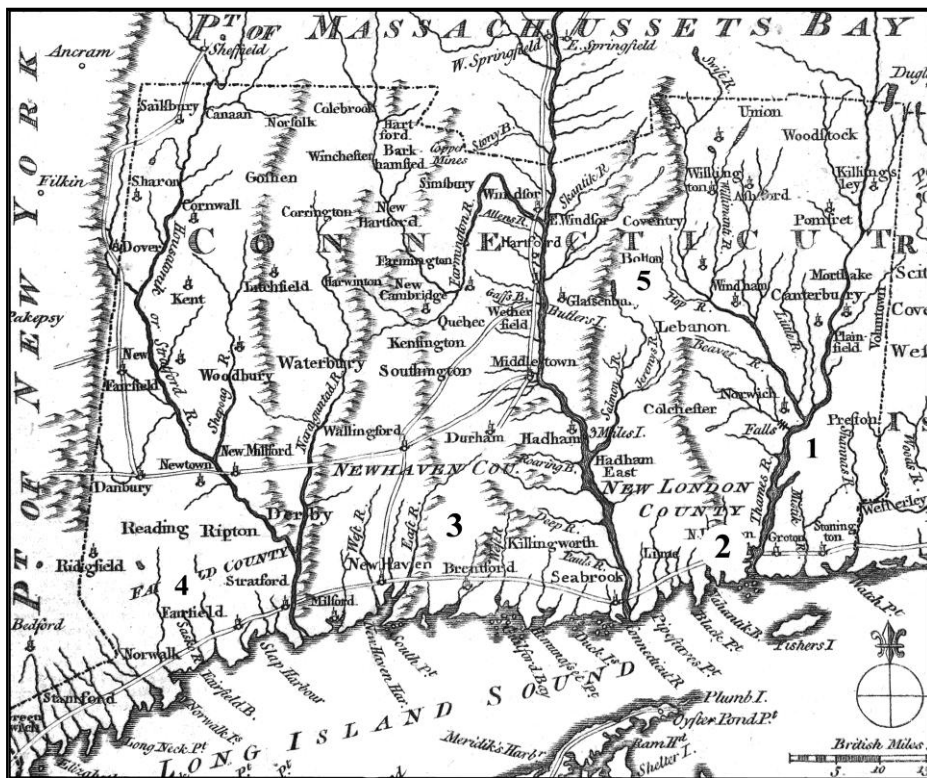


Figure 1. 1776 Map of Connecticut showing locations of the five 18th-century archaeological house sites: Story Site 1, Daniels Site 2, Goodsell Site 3, Benedict Site 4, Sprague Site 5. By an unknown cartographer. University of Connecticut, Storrs.

With his father and brothers Story shared shoreline property, boats and fishing nets. Strong and skilled men, working together, they laid out the seines, hauled in the catches, and then wound the

nets around the large reels on which they were stored. New nets were made and old ones repaired. As was typical in colonial New England, the Story family also engaged in a variety of other activities, diversifying the household economy and creating more opportunities for year-round income. Ebenezer Story farmed 20 acres of land and owned several dairy and beef cattle, a few pigs, and a small flock of sheep for mutton and for wool, which his wife Mehitabel spun on their “woolen wheel.” Story had connections to Connecticut’s shipbuilding industry and sold ship timbers to Uriah Hayden during the construction of the *Oliver Cromwell* in 1776. Then, in 1777-1778, the 36-gun Continental frigate *Confederacy* was built on Ebenezer Story’s property.

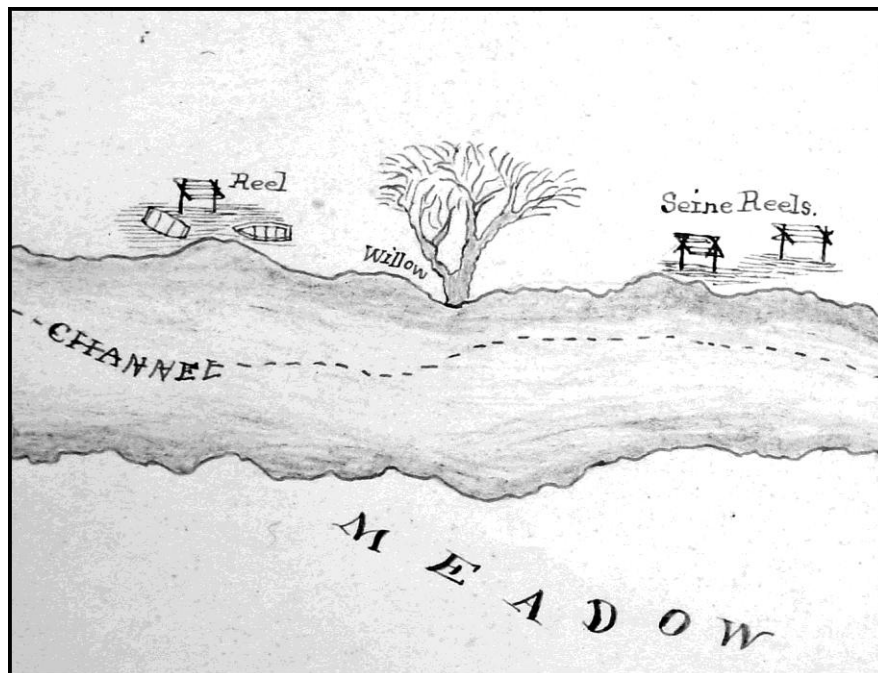


Figure 2. Sketch of seine reels and boats on the Connecticut River. From the Brainerd Academy, c. 1840s. Connecticut State Library, Hartford.

Story acquired a tavern license from the Connecticut General Assembly to serve food and grog from his home, catering to the shipyard workers. Taverns or public houses were places for people to meet, and during the American Revolution they provided important rendezvous points to exchange intelligence and develop strategies. When the *Confederacy* was completed, Story hired on as a ship carpenter and served until the vessel was captured by the British Navy off the coast of Virginia in 1781. Sadly, Story starved to death in the infamous British Sugar House prison in New York. When his probate inventory was filed in Norwich in November of 1782, it listed his part ownership in boats and his right in seines, valued at 70 shillings. Story had “Half a Pump and Appurtanences,” valued at 10 shillings, to bail water out of his boats. His carpentry tools included a “Grind Stone, Backed Hand Saw, Gouge, Compasses, Grooving Plane, Sash Plane, Halving Plane, Round Plane, Hollow Plane, Large Plane, Joint Stock, Plane ditto,” and a “Chisel.” There was also listed a “Blue Sea Chest.” In addition, Story left the large sum of £244 in gold and silver, probably the payment he received for leasing his land for the *Confederacy* shipyard, along with a few luxury items such as a beaver hat, silver shoe buckles and a silver watch.⁴

Archaeological excavations at the Ebenezer Story homestead discovered the buried

remains of the family dwelling/tavern, a barn, an outbuilding and several pits outside of the house for storage of root vegetables or “sauce,” as they were called. Inside the cellar was a brick cistern. Cisterns were commonly used in maritime settlements, where fresh water was scarce or when wells became contaminated with brackish water.⁵ Only a portion of this rich site, now a State Archaeological Preserve, was excavated. Many of the artifacts found at the site are associated with the maritime activities of Ebenezer Story and several generations of his descendants who lived at the homestead and engaged in fishing, oyster cultivation and small-scale farming until the late 19th century. A variety of lead fishing weights and sinkers and fish hooks were found, most of which had changed very little in form from those used in medieval Britain.⁶

The sizes and types of the weights and sinkers relate to the fishing techniques used and



Figure 3. Fishing tackle from the Story Site. Fish hooks, lead line-sinkers, cast-lead net weights and handmade lead net weights.

as for striped bass and tautog (blackfish). The line was cast out and the sinker rested on the bottom. The line and bait, such as a piece of crab, were allowed to drift out with the flow of the current. The seven fish hooks and fish hook fragments found at the Story Site appear to be of the same type, with barbs and no eyes, the ends splayed out. Fish hooks could be purchased from local merchants in a variety of sizes, which were not standardized with numbers as they are now, but were sold with names related to their intended fish. For example, a New London merchant in 1793 advertised “cod,” “mackarel,” and “black fish” fish hooks. Fish nets could also be purchased “ready cork’d and leaded.”⁷

A total of 212 fish bones were recovered from a refuse pit or midden which filled a deep natural depression directly behind the Story house. In the 18th century, people threw their trash and food remains directly outside of their homes, often, as archaeologist James Deetz noted, “at what to us would be an alarmingly short distance from the door.”⁸ The Story house was built next to a natural swale into which the family deposited its trash for generations, until it was full. The bones represent a diversity of fish types, including those of the herring family (Family *Clupeidae*) (shad, alewives, menhaden and herring), striped bass (*Morone saxtilis*), and temperate bass (*Morone spp*) (includes white perch and the striped bass). Other bones are from the freshwater sucker (Family *Catostomidae*) (includes the quillback, white sucker and long-nose sucker). Suckers can be caught in great numbers in the spring when they swim up small fast-moving streams to spawn. Other fish bones are only identifiable to the Class Osteichthyes (bony

the strengths of the tides and currents. Seven lead net weights were found, some cast from specially-made molds, and some cold-hammered into shape from scrap lead. Most of the net weights were found in the yard south of the house, indicating that net-making and repairs occurred there. For fishing with hand lines and “angles,” the excavations found four lead line-sinkers and a variety of fish hooks. The line-sinkers were made by pounding and bending lead into a bulbous tube. Fishing line was fed through the hole and was kept from sliding down by a knot or small piece of lead

fastened below the sinker.

One fishing method used with this type of sinker was as a “drift” or “sliding” sinker, such

fish), and not to a family or specific species.

All along Connecticut's rivers and streams families owned and shared fishing places. In 1808 in the town of Haddam on the Connecticut River, there were about 30 seines annually employed for shad-fishing alone, which lasted from the end of March to early June. At one fishery 30,000 shad were caught in one season and more than 2,000 were pulled in with one "draught" of the seine, indicating the importance and scale of these enterprises. Further up the Connecticut River in East Windsor, similar catches were recorded two years earlier, including reports of taking 84 barrels of alewives in one haul. For fishing families like the Storys, who obtained much of their yearly income from the fish runs, the catch had to be preserved to ship to markets, and the most common method involved quickly gutting the fish, salting them, and packing them into barrels. Fish were also dried, smoked and pickled for preservation. The variety of fish sold by Connecticut merchants was considerable and included local and distant catches. One Hartford merchant in 1796 advertised "dry Codfish, dry Bass, smoked Salmon, pickled Codfish, ditto Salmon, ditto Mackriel," and "ditto Halliboat."⁹

For Thomas Daniels, a farmer who established a homestead in 1712 three miles outside of New London (now Waterford) and three miles from Long Island Sound, fish were also an important part of the household economy. Nothing in the probate records of Daniels, who died in 1735 of pleurisy, would indicate the importance of maritime resources to his livelihood; only various household furnishings, livestock and farming implements are listed. Daniels's widow Hannah remained at the house until her death in 1744; her probate lists minimal household items as well. After she died, the house was sold off in a lottery, occupied by an unknown blacksmith



Figure 4. Artifacts from the Daniels Site. Spall gunflints, fish hooks, lead line-sinker, musket ball, Rupert's shot, cast shot wasters tumbled shot and tumbled shot blank.

(a smithy was found attached to the house) and abandoned by the 1770s. A variety of maritime resources were discovered in archaeological excavations of the buried Daniels house remains and yard. Fishing tackle includes several fish hooks and a lead line-sinker of the type typically associated with bottom-fishing; it was typically tied to the end of the line like a plummet, with one or more hooks tied above. A total of 579 fish bones were found. Fish types represented include freshwater catfish (Family *Ictaluridae*), also called "horned pout" in New England, freshwater bass (*micropterus* spp) (includes smallmouth bass), temperate bass (*Morone* spp)(includes white perch and striped bass), wrasses (Family *Labridae*) (includes tautog/blackfish), and sturgeon (*Acipenser* spp) (includes the Atlantic and short-nose sturgeon). There were also numerous fish bones of the Class Osteichthyes (bony fish) that could not be attributed to family or species.¹⁰

Located seven miles north of Long Island Sound and about eight miles from the port city of New Haven, the c. 1737 Samuel Goodsell homestead in Branford (now North Branford) also reflects the mixed household economy typical of colonial Connecticut. Goodsell was a relatively prosperous farmer who owned an "Old House" and a "New House," a large barn, an orchard and livestock. His life was cut short in 1751 when he was killed by a log at a sawmill in which he was a part owner. Samuel's widow Lydia remained at the house and ran the farm until she died in the late 1790s, at which point the homestead was abandoned. Only seven fish bones were

recovered during the excavation of the buried remains of the Goodsell houses, including one from a freshwater sucker (Family *Catostomidae*). The rest are attributed to the Class Osteichthyes (bony fish). The sucker may have been caught in the Muddy River, which flows about a half mile from the site. A simple lead sinker was also found.¹¹



Figure 5. Handmade lead line-sinker from the Goodsell Site, three strike-a-lights made from European flint ballast cobbles with cortex from the Daniels Site (center), and three European flint ballast cobbles from the ruins of Long Wharf in New Haven.

markets of New York City or “York,” as Connecticut Yankees called it, about 50 miles away, afforded a ready market for farm produce. Like the Goodsell Site, excavations at the Benedict homestead produced few fish remains, six in all, though only a small portion of the site, on the edge of a major roadway, was excavated, part of the filled-in and buried stone-lined cellar. The fish bones are identified to the Class Osteichthyes (bony fish).¹²

In Connecticut’s northeast uplands in the town of Lebanon (now Andover), Ephraim Sprague arrived from Duxbury, Massachusetts in about 1705 to establish a homestead. He built



Figure 6. Fishing tackle from the Sprague Site. Lead line-sinker, lead net weight and fish hooks.

the buried Sprague homestead, which was inhabited until the 1750s, when the house burned down, produced a very large assemblage of artifactual and faunal remains, including 97 fish bones. Fishing tackle includes two fish hooks, a lead line-sinker and a lead net weight. Most of the fish remains are from freshwater species such as suckers (Family *Catostomidae*), freshwater catfish (Family *Ictaluridae*), and freshwater bass or sunfish (Family *Centrarchidae*). Numerous bony-fish (Class Osteichthyes) remains were also found.¹³

The c. 1713 Benjamin Benedict homestead site is located seven miles from Long Island Sound in the town of Wilton (originally Norwalk). The Norwalk River flows approximately 300 feet to the west of the buried house remains. The homestead was occupied by several farming families who raised cows, pigs and sheep. One of the occupants of the house was a farmer named John Taylor, who died in 1742. Taylor’s probate inventory lists various livestock, farming implements, and household furnishing, but nothing indicative of maritime activities.

The farm’s location and proximity to the markets of New York City or “York,” as Connecticut Yankees called it, about 50 miles away, afforded a ready market for farm produce. Like the Goodsell Site, excavations at the Benedict homestead produced few fish remains, six in all, though only a small portion of the site, on the edge of a major roadway, was excavated, part of the filled-in and buried stone-lined cellar. The fish bones are identified to the Class Osteichthyes (bony fish).¹²

his house where the Hop River is joined by a small brook, which was named Sprague Brook. Sprague rose to distinction as a militia captain, deacon in his church, town selectman and representative to the General Assembly before he died of “consumption” in 1754. When Sprague first arrived in the Hop River Valley, the region was still an interior wilderness and Lebanon was a sparsely settled frontier community. The Spragues cleared the land, raised crops and livestock, and extensively

fished, hunted and trapped wild game, including black bear (*Ursus americanus*), white-tailed deer (*Odocoileus virginianus*) and turkey (*Meleagris gallopavo*). Excavations at

Eel bones (Order *Anguilliformes*), the principal species in the region being the American eel (*Anguilla rostrata*), were also found at the Sprague Site. Eels are unique in that unlike anadromous fish like shad and salmon that live in the sea and then run up fresh water streams to spawn, the eel is catadromous; that is, it lives in freshwater streams and migrates to the depths of the Atlantic to spawn. Eels and frostfish or tomcod (*Microgadus tomcod*) were also among the few fish species that were actively caught by the colonists in the winter. Eels were taken with hook and line, with spears, and in nets set up at stone weirs across rivers. Many of the fish weirs were likely built on the remnants of weirs that had previously been used by Native peoples since well before colonization began. While marching with the French Army through Connecticut in 1780 to assist America in the Revolutionary War, Major General François Jean de Beauvoir Marquis de Chastellux observed that the eel traps in the Quinebaug River consisted of dams in the shape of “projecting angles,” and where the points came together in the middle of the river, the fishermen “...place nets in the shape of a purse.” Eel were also caught in cylindrical pots woven from wood splints, like a basket, and baited with carrion. A funnel leading into the trap made it difficult for the eel to find its way out again. Eel were greatly esteemed for the table, evidently for all meals, for when traveling through southwestern Connecticut in 1786, a young London merchant named Robert Hunter, Jr. observed that “...it’s often the custom here to give you eels, beefsteaks, salt fish, etc., for breakfast- to ladies and to gentlemen.”¹⁴

The excavations at the Sprague homestead also discovered the bones of saltwater fish species, including those of flounder (*Paralichthys* spp.) and cod or hake (Order *Gadiformes*). This shows that despite living in an upland frontier town, the Spragues had access to maritime resources, and like families living on the coast and on tidal rivers, they enjoyed varieties of both freshwater and saltwater fish.

Shellfish

When the first colonists arrived in New England shellfish were found in extraordinary numbers. Early English accounts described oysters nine inches in length and so common they fed them to their hogs. While traveling through Connecticut from her home in Boston to New York in 1704, Sarah Kimball Knight observed that “There are great plenty of Oysters all along by the sea side, as farr as I Rode in the Collony, and those very good.” As with fishing, probates and other records provide few clues to the importance of shellfish in the diet of colonial Connecticut families. And like fish, shellfish could be obtained by anyone directly from rivers and bays with the right equipment and hard work. While traveling from his home in Pennsylvania to join the American troops in Cambridge, Massachusetts, in the fall of 1775, Major Ennion Williams passed through New York City and stopped at a house to eat before crossing into Connecticut. In Williams’s words, “Here the landlady being scarce of fresh beef had some oysters in a few minutes, drawn out of the river just before the door, thus happily does nature supply them in case of necessity.” Besides being plentiful, shellfish could be had year-round, making them an especially important food resource when crop and livestock yields were poor or food supplies were low. Shellfish, particularly oysters, were so plentiful and cheap that when sailing from Rhode Island to Connecticut in 1771, Scottish merchant William Gregory and his party provisioned themselves with roast beef, wine, biscuits, cherry rum, gammon (cured ham or bacon) and “...a bushel of good oysters I ever saw for a pistereen,” which was a small Spanish silver coin.¹⁵

Shellfish were cooked in a variety of ways, including the iconic New England dish of chowder. The word chowder probably originated from the French word *Chaudière*, or cauldron, and was introduced into Newfoundland and New England by Breton mariners. One chowder recipe, which was published in the *Boston Evening Post* in 1751, was put into rhyming verse, making it easier to remember as well as convenient for non-literate cooks:

*First lay some Onions to keep the Pork from burning,
Because in Chouder there can be no turning;
Then lay some Pork in Slices very thin,
Thus you in Chouder always must begin.
Next lay some Fish, cut crosways very nice,
Then season with Pepper, Salt and Spice;
Parsley, Sweet-Marjoram, Savory and Thyme,
Then Biscuit next which must be soak'd some Time.
Thus your Foundation laid, you will be able
To raise a Chouder, high as Tower of Babel:
For by repeating o're the same again,
You may make Chouder for a thousand Men.
Last, Bottle of Claret, with water eno' to smother 'em,
You'll have a Mess which some call Omnium gather 'em.*¹⁶

The *omnium gatherum*, or hodgepodge aspect of chowder, allowed for many regional variations to develop and for it to be made with whatever ingredients happened to be on hand.

Shellfish, particularly oysters, were also preserved for later use and sale. The most common method was to crack the shells, shuck the oysters out with a knife, rinse and drain them, and then pack them into barrels with salt. Shellfish were also preserved by pickling. One 1745 English recipe “to pickle Oysters, Cockles, and Muscles” circulated widely in the colonies and called for the shellfish to be simmered and then added to a mix of mace, pepper and cloves, salt and white-wine vinegar. The shellfish were then stored in barrels or “stone-jars,” which were typically hard-bodied ceramic vessels that had been glazed with salt during the firing process. The salt glaze made the vessels impermeable.¹⁷

Large quantities of shellfish remains were discovered during the archaeological excavations at all five of the house sites. At the Story, Daniels and Goodsell sites the shellfish remains were so concentrated in some areas around the houses that they formed distinctive shell-disposal areas or shell middens. The shellfish are primarily eastern oyster (*Crassostrea virginica*), quahog (*Mercenaria mercenaria*), and soft-shelled clam (*Mya arenaria*), though smaller amounts of Atlantic bay scallop (*Argopecten irradians*), sea scallop (*Placopecten magellanicus*) and channeled whelk (*Busycon canaliculatum*) were also found. The most common shellfish was oyster, followed by quahog. The quahog, whose name was adopted from the Narragansett Indians, was not eaten raw as oysters were at times, but was always cooked in various ways, including “roasted in the shell, or opened & boiled, fried or made into soups or pies.”¹⁸

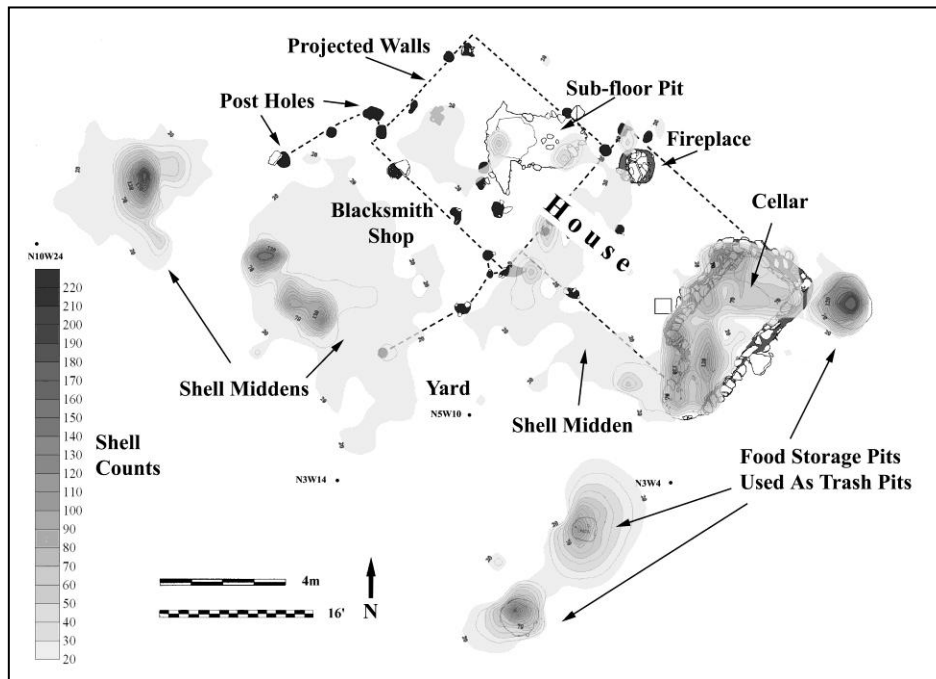


Figure 7. Archaeological site plan of Daniels house and yard showing the distribution of shell refuse. On the eastern end of the house is a stone-lined cellar and the west end of the house is an addition built using earthfast construction.

Despite being seven miles from the sea, the Goodsells apparently made routine trips to harvest shellfish themselves, as Samuel Goodsell’s probate records list “a large cockle riddle” (a coarse sieve) valued at 10 shillings and a “pair of oyster tongs” (for gathering oysters) valued at 1£ 10 shillings. The shell refuse at the Goodsell Site primarily took the form of two large shell middens behind the two small houses. One midden measured approximately 20 x 60 feet and the other, which seems to have been wrapped around a yard fence, was about the same size. Large shellfish refuse deposits were also found at the Daniels Site, including one to the west of the house, one off the blacksmith shop lean-to and a third right along the southern wall of the house. Shellfish refuse was also found in three oval-shaped food-storage pits, later used as trash pits, and in the cellar, which had been filled in with soil, stone and house refuse when the house was abandoned and converted into a farm field.

Unlike the more surficial disposal patterns typical of the period, the shell-refuse deposits at the Story Site were discovered in the deep swale located behind the house that was used as a midden. The remarkably distinct stratigraphic layers of the swale midden clearly showed the size of the oyster shells as shrinking through time. The oyster shells at the bottom of the swale midden, which date to the period when Ebenezer Story lived at the house (last quarter of the 18th century) are the largest, often exceeding five inches in length and an inch in thickness. In the upper layers of the midden, the oysters are much smaller, half the size of the older, deeper oysters; these are associated with the period of Ebenezer Story’s son and grandson during the first three-quarters of the 19th century. By the mid-19th century the Story family had resorted to planting oysters in beds in nearby Poquetanuck Cove.

Even the interior upland Sprague Site has over 400 shellfish fragments in the archaeological assemblage, mostly oyster and quahog. The Spragues, however, seem to have

utilized local freshwater shellfish as well, with 44 freshwater mussel shells (*Elliptio complanta*) found at the site.

By the end of the 18th century an oyster industry had developed, in which large quantities of shellfish were harvested and shipped to New York City and other population centers. It was reported in the town of Milford in 1816 that five to six thousand bushels of oysters were harvested annually and 200 bushels had been harvested in a single day. Other shellfish were also aggressively harvested. While stopping in the coastal town of Fairfield in 1789, Samuel Davis of Boston witnessed the locals having a “Feast of Shells,” which was, in part, a remembrance day of their early Puritan forbears, who at times survived by eating shellfish: “The clams are brought from Long Island, and roasted in the sand. Age and youth of either sex were of the party, which was very numerous, festive, novel and agreeable, and closed with a ball in the evening.” Davis had evidently been to his first clambake. Oyster and other shellfish populations, however, steadily declined and towns passed laws in efforts to regulate their harvesting. In 1793 in East Haven, for example, laws prohibited the crossing of oyster beds with “horses and cattle, with any cart, waggon or other carriage,” put a one-year moratorium on harvesting “long clams” from their beds, and licensed individuals to harvest the town’s “oysters and round clams.” Illicit harvesting of shellfish carried a hefty fine of 20 shillings.¹⁹

Crabs and lobsters were also widely eaten in Connecticut, though they were hardly valued as they are now. Lobster were caught in lobster pots and gathered among the rocks during low tide. In early years lobsters were recorded as weighing twenty pounds apiece, though as William Wood pointed out in his 1634 book *New England’s Prospect*, “their plenty makes them little esteemed and seldom eaten.” Indeed, crustaceans were considered good bait for eel pots and catching striped bass with a hook and line.²⁰

Waterfowl and Aquatic Game Animals

Connecticut’s waterways were not only full of fish and shellfish, but wild game of all sorts, including waterfowl and aquatic animals, were also abundant. Connecticut’s bays, salt marshes and long tidal rivers made ideal habitats and flyways for large flocks of migrating waterfowl. In the 18th century waterfowl and other game were typically hunted with a family’s all-purpose flintlock musket (used for both hunting and militia service), or with a “fowling piece,” which was a gun mounted with long, large-bore barrel up to six feet in length. Waterfowl were usually hunted from blinds or in a “gunning canoe,” which was sometimes outfitted with a compass in case the hunters were suddenly overtaken by fog. Waterfowl not only provided meat and grease, but the down was stuffed into featherbeds and the quills were made into writing pens. Feathers were in such demand that merchants often offered cash for them. At the outbreak of the Revolutionary War in 1775, the Committee of Inspections for the coastal towns of Saybrook, Killingworth and Lyme suspended “fowling or any other game” for seven months to “preserve all the Gun Powder that we have in our hands” for the war effort. Both goose (Goose spp) and duck (*Anas* Spp) bones were found at most of the house-site excavations, though some of the bones were almost certainly from domesticated birds. Other waterfowl bones found include loon (Order *Gaviiformes*) at the Sprague Site, wood duck (*Aix Sponsa*) from the Goodsell Site, and those of the Order *Charadiiformes*, which includes shorebirds, auks and gulls, at the Daniels Site. Eggshells were found at most of the house sites. They may be from domestic fowl, but the eggs of wild waterfowl were opportunistically eaten, as farmer-mariner Joshua Hempstead of New London noted in his diary in 1741, when he “went to Gardiners point & pickt some Gull Eggs.”²¹

Various aquatic mammals were also hunted and trapped in Connecticut, for their meat as well as for the trade in valuable “small furs.” The beaver (*Castor canadensis*), the most lucrative of the fur-bearing animals, had been hunted and trapped so heavily in the early years of settlement that by the 1660s it was no longer of economic importance in Connecticut. Beaver remains, however, were found at the Sprague Site, indicating they had survived within insular frontiers into the 18th century. Remains of the *musquash* (*Ondatra zibethica*) were also found at the Sprague Site (*Musquash* is an Algonquian Indian word later anglicized into the familiar word muskrat). More numerous and prolific than beavers, muskrats flourished in Connecticut’s vast marshes and rivers, feeding on tubers and shellfish. The muskrat, as well as the mink and otter, remained important sources of fur throughout the 18th century in Connecticut. Furs were used to make fashionable hats and trim, but they were also essential for surviving the long New England winters and Connecticut merchants often offered cash for pelts. In the winter of 1779-1780, French sailing master Jean-François Landolphe waited with his crew in New London for repairs to be finished with his ship *La Negresse*, which had been damaged in a storm. Landolphe recalled in his memoirs that the ice on the Thames River was “extremely thick” and “the sea itself was iced over to a distance of three leagues from the shore.” To combat the “extreme harshness” of the cold, Landolphe bought fox skins to make himself a vest and line his overcoat; he also wore a bearskin cap on his head and purchased other furs to line the inside of his boots.²²

Dolphins and porpoises were also hunted in Connecticut and the vertebra of an ocean dolphin (Family *Delphinidae*) was discovered in the Storys’ swale midden. Connecticut’s coastal waters are home to several dolphin species, including the bottle nose dolphin, which can reach a length of 12 feet and weigh up to 600 pounds. Dolphins and porpoises were valued for their oil and hides; in the early 1790s a porpoise fishery set up in the coastal town of Madison was taking 600 to 700 of the animals annually. The tanned skins were considered particularly excellent for items such as blacksmith bellows, and each animal yielded about six gallons of oil, which was judged equal to whale oil for lamps. Even the meat of porpoises was eaten by some of the hardier mariners. On his first voyage to New England in 1638, John Josselyn wrote that the crew harpooned a “Porpice” or “Sea-hogg,” which they hoisted on board and then cut into thin strips to fry. Josselyn described the meat as tasting like “rusty Bacon, or Hung Beef;” however, porpoise liver, “boiled and soused sometime in Vinegar is more grateful to the pallet.” The seal or “sea calf,” was also valuable. The hide and oil were used, but the meat was considered by some to be “not very delectable to the palate or congruent with the stomach.” The seal was apparently only hunted opportunistically in Connecticut waters, such as in February of 1717 when Manassah Minor of Stonington noted in his diary that “the boys killd a seal on land.”²³

Turtle meat was esteemed in the 18th century, and ocean and freshwater species were taken. Sea-turtle hunting was extensively practiced in the West Indies by European mariners and by Native Americans. Sea turtles provided meat for sailors and were shipped to London and large coastal cities like Boston, where they commanded high prices for use in soup. Sea-turtle shells were also an important commodity and were made into a variety of useful items. In 1748 Joshua Hempstead received as a gift from a friend a pair of “Turtle Shell” “Specticles” equipped with a “fish Skin Case.” Land and aquatic turtle bones were found at all of the house sites. The box turtle (*Terrapene carolina*), a land turtle, was found at the Daniels Site; water turtle (Family *Emydidae*) was found at the Goodsell Site; and the largest and most formidable of New England’s turtles, the snapping turtle (*Chelydra serpentina*), was found at the Story, Benedict, and Sprague sites. Common to fresh water, snapping turtles are also found in brackish tidal rivers. Turtles were probably opportunistically caught while sunning themselves or laying eggs.

Detailed instructions for dressing and preparing turtle in 18th-century cookbooks indicate its status as a delicacy. Recipes included turtle soup and turtle cooked in its own shell. Turtle also had a role in early folk medicines. John Josselyn gave a prescription for the burning of land-turtle shells and heads to an ash which was mixed with egg whites to prevent “the falling of the hair, and will heal the Hemorrhoids, first washing of them with white-wine, and then strewing on the powder.”²⁴

To keep their flintlocks serviceable, hunters needed a supply of gunpowder, gunflints, and lead shot. Most gunpowder sold in Connecticut was imported and commonly sold as “Dutch” or “English.” Gunflints were found in abundance at all of the house site excavations. In 18th-century Connecticut, most gunflints were of two basic types: the spall and the French. The spall gunflint was made by knocking a wedge-shaped flake off of a flint cobble with a hammer and then working the flake into various sizes and grades by removing small flakes from the edges. French blade gunflints were made from long prepared blades of mined flint, with each gunflint furnished from a section of the blade that was snapped off and then trimmed into various sizes and grades. Only by the end of the 18th century did the English adopt the blade technology in gunflint production. Lead shot was also found at the house sites in various sizes, and of three basic manufacturing types. Rupert’s shot, which was typically purchased, was made by pouring melted lead, fluxed with arsenic, through a colander into tubs of water. The size of the holes in the colander determined the size of the shot. Rupert’s shot has a small characteristic dimple on it. Like fish hooks, lead shot was not sold with number sizes as it is today, but with names corresponding to their intended game. In 18th-century Connecticut, merchants typically advertised such shot types as “bird,” “duck,” “geese” and “swan.” Some hunters made their own shot, which they cast into specially-made shot molds called gang molds. The molds were manufactured from brass or were homemade, carved out of local soapstone (steatite). Shot was also produced by a laborious process which involved pounding lead into long rectangular blanks and then cutting off small cubes of the desired shot size. The edges of this type of “tumbled shot” were then rounded by rolling them in sand or ash.²⁵

Other Bounties of the Sea

Connecticut’s fish, shellfish and water mammals offered the colonists far more than sustenance, feathers and furs. Fish were boiled in large kettles to extract their oil, which was sold by the barrel or gallon. Fish oil was used in lamps, like seal or whale oil, and was an additive to paint, like linseed oil. Fish glue or “isinglass,” as it was sometimes called, was made from the air bladders or sounds of fish, though that of the Huso fish or beluga (*Huso huso*), a type of sturgeon commonly found in Russia, was considered to be the best. Fish, particularly whitefish and menhaden, were also caught in large numbers and used as fertilizers to enrich fields, but fish oil and “fish guano” industries did not develop in Connecticut until the 19th century.²⁶

Along with fish guano, a variety of other maritime resources were used by New England farmers as fertilizers or “manures,” as they were called. As soils became worn out from repeated planting and harvesting, farmers sought new ways and new materials to enrich their fields and increase crop yields. The most common type of fertilizer was from livestock, but in the 1740s, Jared Eliot of Guilford was also advocating in his book *Essays Upon Field Husbandry* the use of small broken shells or “sand-shell,” seaweed and sea salt for fertilizers. Samuel Deane’s 1790 farming manual from Massachusetts, *The New-England Farmer: Or Georgical Dictionary*, expanded the list and included “sea plants, rock-weed, eel-grass,” the “shells of shell-fish,” “beach sand,” “the mud dug out from swamps, rivers, ponds and the sea,” “fish of all kinds, from

the whale to the muscle,” and “sea water,” as good fertilizers. Seaweed was used for more than just a fertilizer, however, as Joshua Hempstead noted in his diary. In the winters Hempstead carted up loads of seaweed to his farm to cover his cellar door to insulate the cellar and keep his food stores from freezing, a technique known as “banking.” He also insulated the walls of his house with seaweed and covered his “hovels,” or animal sheds, with seaweed to help protect his livestock from the cold. He even used seaweed to fill the holes in his fields when he pulled out large stones.²⁷

Another common household material, mortar, had long been made from lime in Europe. In his book *Mechanick Exercises*, published in 1703, the Englishman Joseph Moxen noted that the most typical sources of lime were limestone and chalk, “But the shells of Fish, as of Cockles, Oysters, &c., are good to burn for Lime.” One source of lime used in Connecticut came from limestone, deposits of which had been found in Rhode Island by about 1660; 18th-century Connecticut newspapers commonly advertised “Providence lime stone” for sale. The excavations of the five house sites found that the most common type of mortar used was made from shellfish and coral.



Figure 8. Artifacts from the Goodsell Site. Shell mortar, including large piece with brick impression, a fragment of coral (center) and an oyster shell.

At the upland Sprague Site mortar materials included clay, limestone, shellfish and coral. The coral, which probably came from the West Indies as ballast, was also found at the Goodsell and Daniels sites. Shell mortar, however, could be made by families from the abundant shellfish found along Connecticut’s coasts and tidal rivers. Like limestone, shells and coral contain calcium carbonate, which when burned at hot temperatures is converted into quicklime (calcium oxide). To make quicklime into mortar it is then “slaked” by adding water, which creates heat and a powerful chemical reaction. The “slaked lime” is pounded into a white powder and then mixed with sand and water to make the mortar. The process of producing

quicklime from shells and coral was still practiced by families in the West Indies into the last century, which was made into mortar for the construction

of brick cisterns, cemetery monuments and other structures. The process basically involved burning dried and crushed shell and coral on large stacks of layered hardwood such as acacia. Seaweed was laid on top, and rocks were placed on the mound to compress the shell and coral as it slowly burned. Sea water was then added slowly onto the smoldering mass until the fire burned out and the shell and coral were saturated. The process took about 24 hours.²⁸

Sand and flecks of burned and unburned shell are clearly visible in the mortar fragments found at the Connecticut house sites, and they have a texture that is soft and crumbly. These characteristics suggest that the mortar was not of the highest quality and may have been made on site by the house-builders themselves. Among the most common house types in Connecticut in the early 18th century were timber-framed clapboard and shingle-covered structures built over a partial stone-lined cellar with a stone fireplace. Some early dwellings, such as the Daniels house, also used earthfast, or post-in-ground construction, whereby the clapboards were nailed directly to upright posts. The archaeological evidence indicates that mortar was a particularly important

component of fireplace construction; fragments were typically found in association with the buried remains of fireplace footings and within chimney rubble. The primary function of the mortar was to stabilize the stones and to point the chimney, which confined the air to the flue and kept the smoke from entering the house. In 1746 Joshua Hempstead recorded such work when he wrote in his diary that “I stopt up Several holes & Cracks in the Chimney within Side from the Roof downwards with Loom Morter & Small Stones.” Mortar was also used for laying chimney brick which, for much of the 18th century in Connecticut, was used only above the roofline. This technique of “topping off” a chimney gave the appearance of a more expensive brick fireplace, but the fireplace was generally of stone. Some of the mortar fragments found still have impressions of brick in them. Lime was also used to make plaster and was thinned down for whitewash.²⁹

In the 18th century, the most common method of fire-making was with “flint and steel.” The steels, or fire steels, were generally oval, J-shaped or C-shaped implements, which were held in one hand and then struck against a strike-a-light stone held in the other hand to create sparks. Strike-a-lights were made from a number of hard silica stones, such as flint, chert, jasper, and chalcedony, and have distinctive concave crushing-wear patterns on their edges where the fire steel repeatedly struck the edge of the strike-a-light. The sparks were directed onto prepared charred material such as linen, tow or spunk, which was made from dry and punky wood or tree fungus. Once a spark caught hold, it was added to tinder, which was made from light and flammable materials such as tow and shredded birchbark, and was then blown into flames. Based on the archaeological evidence at the house sites, strike-a-lights came from several sources. One source was from imported gunflints, the same as those used in their guns. Other sources included natural outcroppings of siliceous stones and ancient Indian stone tools that were picked up by colonial farmers in fields. But another important source of strike-a-lights came from ballast cobble dumps found at beaches and wharves. Much of the natural ballast used by European ships sailing to America was composed of flint beach cobbles, which are abundant along the southern coast of England and the northern coast of France. When a ship added cargo to her hull in America for the return trip, the ballast cobbles were simply tossed off the ship, resulting in ballast dumps. Flint ballast dumps have been documented in New England, including at Block Island and at Mohegan on the Thames River, and many other places where ships loaded cargo. Several European flint ballast cobbles were found by the author among the stone ruins of 18th-century Long Wharf in New Haven, where ballast-dumping was certainly very common. From these dumps, colonial peoples simply picked up the flint cobbles and brought them home where they were broken up into suitable strike-a-light flakes that would create sparks when struck against a fire steel. A distinguishing characteristic of ballast flint strike-a-lights is that sometimes the outer cortex or rind of the cobble is still visible on some of the sides. The Daniels Site had an especially large assemblage of European flint debris and some of the flakes, strike-a-lights and gunflints have visible cortex. Some of the spall gunflints may also have been locally made from ballast-dump cobbles. Ballast dumps were evidently such an important source of flint that on September 19, 1775 the British halted the practice of using flint as ballast in ships sailing to America. The British Navy was ordered to search all incoming ships and to dump all flint ballast cobbles in deep water to prevent rebel colonists from using them to make gunflints.³⁰

Salt

Salt was a fundamental element of colonial food preservation. It was essential for

preserving fish, beef and pork, which were salted and then packed into barrels. Pork generally needed heavy salting, but beef less so. One method for preserving “a barrel of beef of the common size” included four quarts of salt ground into a powder, eight ounces of saltpeter (potassium nitrate), and five pounds of brown sugar. One recipe for making bacon included taking a ham and soaking it in a solution of one ounce of saltpeter, one pint of bay salt, and one pint of molasses for six to eight weeks and then hanging it in the chimney or in a smoker with corn “cobs or malt fumes” for three weeks. Salt was also necessary for preserving other New England food staples such as butter and cheese, and it was added to vinegar-pickling solutions for meat, fish and vegetables. Used as a food condiment, salt was typically served in a small dish called a saltcellar, which was made of ceramic or glass, or, if one were especially wealthy, silver. The saltcellar was the centerpiece of the table. Hosts and “guests of honor” were symbolically seated above the salt (or middle of the table) and children and guests “of not much dignity or account” were seated below the salt. There were several basic sources of salt. There was salt that was mined, which was called “rock salt;” “fountain salt,” which was extracted from natural salt springs or ponds; and salt that was obtained from sea water, known as “bay salt.” The port cities of Lisbon and St. Ubes in Portugal, Cadiz, Spain, and Liverpool, England were major suppliers to Connecticut; considerable quantities of salt also came from the West Indies, especially Turks Island, St. Martin and Anguilla. Saltworks were also established early in Connecticut to produce bay salt.³¹

Salt production in Connecticut ranged from families simply boiling seawater in kettles in the home fireplace to large-scale commercial saltworks. In 1748 an Englishman named William Brownrigg published *The Art of Making Common Salt*, an extensive how-to book on the process. The basic components of a saltworks included a “sump” or small pond where the sea water was stored. The sea water was then piped into a cistern, where impurities such as mud and sand were separated as they floated to the bottom. From the cistern the water was pumped into large pans. The pans were made of iron plates and could be of varying sizes, up to 15' x 12' and 16" deep, which could hold 1,400 gallons. The pans sat on top of a furnace which heated the salt water. As the water evaporated, the salt was collected and more sea water was added. The pans, furnace and workmen were sheltered by a saltern or salt-house, which was a long narrow building. At one end of the salt-house was the “fore-house” which received the fuel and covered the workmen, and at the other end was the “pan-house,” where the furnace and the pans of sea water were kept. In 1778 the owners of Joseph Trowbridge and Company of New Haven offered to sell or let their saltworks, which contained two wrought-iron pans containing 1,100 gallons, two furnaces and two cisterns, all enclosed within the salt-house. There were also “five evaporating pans or artificial ponds, for evaporating water; all which have a communication to the cistern.” In Killingworth in 1778, another saltworks with two furnaces was offered for sale. One furnace had a pan and three kettles holding 90, 70 and 42 gallons, and the other had five pans. In warmer climates, much of the evaporation process was done naturally with the heat of the sun, but in New England it also took fire and lots of firewood. When a saltworks was sold in Groton that same year, it also included about 100 cords of wood (one cord is 4' x 4' x 8' and has a volume of 128 cubic feet).³²

Despite the abundance of salt found in nature, Connecticut found itself at times with severe shortages, especially during wartime when shipping was interrupted. In 1691 the Connecticut General Assembly encouraged the development of saltworks in the colony by offering a ten-year patent for exclusive rights for its production. The act, however, excluded “any peticular persons from makeing small quantities of salt for their famalies use.” In the 1740s the

General Assembly gave an exclusive right for John and Stephen Jerome to establish a saltworks in the town of Lyme, which carried a 14-year “sole liberty and privilege of making salt, by boiling of sea water.” During the Revolutionary War, salt supplies became critically short for the Continental Army and the British targeted American saltworks in efforts to cripple production, for without salt, General Washington could not feed his army. Salt shortages were a particular problem in Connecticut as it was a major supplier of salted meat and other provisions for the American forces (Connecticut’s nickname at this time was the Provision State). In February of 1779 a detachment of 1,500 British, Hessian and Tory soldiers under General Tryon (former New York Governor), marched from King’s Bridge, New York to Horseneck Landing (West Greenwich), Connecticut with orders to destroy the saltworks there. General Israel Putnam and a small detachment of 150 American soldiers managed only to delay the British, who destroyed some of the saltworks and plundered the town. Putnam himself narrowly escaped by his legendary ride down a steep escarpment.³³ Congress actively encouraged families to produce salt during the war, even from brackish river water, and newspapers printed basic instructions for its production. In June 28, 1776 the *New-London Gazette* published the instructions for “A Method for private families making Salt from Bay water, brackish-spring or salt licks”:

Into an iron pot, the larger and shallower the better, though the least will do, put your river water; boil it half down, fill again and again, repeating the boiling and filling up until the salt appears in the bottom, under the water, when there remains but 1-4 of the pot full; then pour off the liquor, turn the salt into a wooden or earthen bowl, raising it into a high heap and let it drain, dry, and harden in the air. But observe to boil is slower and slower, after three or four times filling, until at length it only simmers....

... Note, You must not boil too low after the salt is formed, lest the remaining liquor, called Bittern, should be entangled with the salt, which would occasion the salt to dissolve in damp weather. And observe to take your river water from the channel, at full tide, and in still calm weather, that it may be as clear as you can possibly get.³⁴

The Story family had part ownership of a saltworks during the Revolutionary War and the probate record of Ebenezer Story’s father Jonathan, which was filed in Norwich in 1781, listed “One Sixth part of Pot-Ash kettle & One Sixth of a Try ditto both at the salt-works.” Ebenezer Story’s probate of the following year listed his ownership in three potash kettles and one-fifth ownership of a try kettle, which were most likely also used for salt production. Potash kettles were large cast-iron vessels, so named as they were also used to make potash, which was created by boiling lye (obtained by percolating water through a barrel or “hopper” of wood ashes) until a hard brown residue remained. Potash (potassium carbonate) was an important ingredient used in making soap, glass and medicines. Try kettles were also large cast-iron vessels used to melt down cut-up whale blubber to extract the oil. As was common in Connecticut Yankee culture, tools and utensils had multiple functions.

Canoes and Scows

To navigate Connecticut’s waterways families used a variety of boats, which they often made themselves and shared ownership of with kin and neighbors. Besides their use in fishing,

shellfishing and fowling, boats were used to travel from town to town, and as ferries, to bring farm produce to market and transport bulky raw materials. The names and types of small sailing craft varied widely throughout the Eastern Seaboard and historical documents such as probate records, diaries and newspapers indicate that canoes and scows were among the most common and important types. Canoes and scows could be made with basic woodworking tools and a minimum amount of skill. They could also be built in a variety of sizes, and because of their shallow drafts, they were especially well-suited for Connecticut's tidal rivers, coves and inlets.

European explorers observed canoes used throughout the Americas by Indian inhabitants and the forms and materials used to build them ranged widely. The word canoe is of West Indies origin, as is *piragua* or *pirogue*, which was sometimes anglicized into "perry augre," and in New England generally referred to a dugout canoe rigged with a sail.

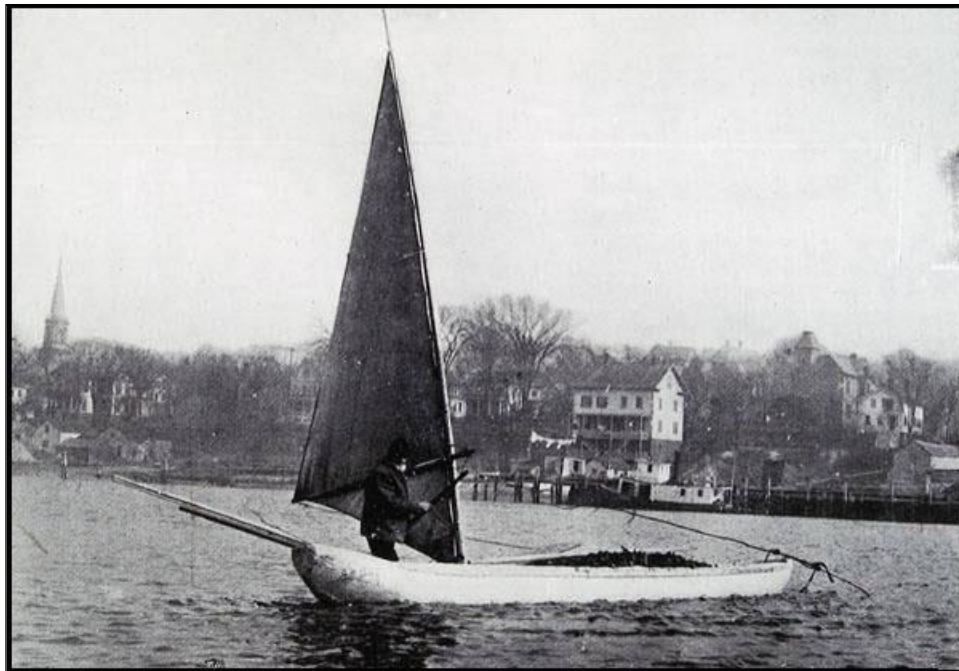


Figure 9. An 1891 photograph of an oyster dugout canoe with a sail on the Quinnipiac River in New Haven. Courtesy of Mystic Seaport, Mystic.

The dugout was the most common type of canoe used in Connecticut. Carved from a single hollowed-out log, Europeans quickly recognized the value of the dugout canoe for exploration and settlement. In 1638 John Josselyn listed the many items necessary for colonization in New England. Among the clothes, provisions, tools and weaponry needed, Josselyn listed a good "boat called a *Canow*," which with a set of paddles would cost £ 3 "in the Countrey." In his second voyage, in 1663, he noted that the English were making canoes out of white-pine logs that were 20 feet long and two and a half feet wide, which they hollowed out with adzes and shaped on "the outside like a boat." Born in West Hartford, Connecticut, in 1752, Noah Webster noted this important adoption of the canoe in his definition in the early American dictionary: "A boat used by rude nations, formed of the body or trunk of a tree, excavated, by cutting or burning, into a suitable shape. Similar boats are now used by civilized men, for fishing and other purposes. It is impelled by a paddle, instead of an oar."³⁵

Like much of the East Coast, the dugout canoe was widely used by colonists in

Connecticut by the mid-17th century. Thomas Minor came from Somerset, England to Salem, Massachusetts in 1630 and eventually acquired a land grant at “Quiambaug,” which later became the town of Stonington. Minor kept a diary between 1653 and 1684, which related many of his activities. He served as town treasurer, town recorder and militia officer. He had extensive contact with Native American peoples, and was a cultural broker who spoke Indian dialects and adopted various aspects of Indian culture. Minor and his family raised livestock, made cheese, and planted flax, turnips, parsnips, rye and oats brought from Europe, as well as “indean corne” and *nunip* or beans, which they adopted from Indians. Because of shortages of hard currency, early business transactions were sometimes made with wampum, which were the small tubular shell beads used by Indians as ornamentation, in rituals, as tribute and in diplomatic exchanges. Wampum was made by grinding and drilling the shells of quahog, which produced purple beads, the most valuable, and the inner column of whelk, which produced white beads. Minor recorded buying, selling and using canoes throughout his life and their use to transport people, equipment and grain, including one trip with 30 bushels of oats. Some of the canoes were purchased from local Indians, who maintained ancient woodworking traditions. Minor recorded the family canoe going to New London and even as far as Hartford. In April of 1658 he noted that the family “suncke the Canoows.” Another time in 1661 he recorded that his son Joseph “swimed for the Canoow.” Remarkably, this was done in mid-February. The submerging of canoes, which was likely adopted from Indians, preserved them by swelling the wood and keeping it from splitting and checking; it would also hide and protect the vessels from theft. Minor also recorded at various times looking for a lost canoe which had gone adrift.³⁶

Throughout the 18th century the dugout canoe was extensively used in Connecticut and though many details of their construction have been lost from that period, bits of information can be gleaned from newspaper advertisements that described canoes that had been “taken adrift,” stolen or were for sale. The advertisements often provide details as to wood type, size, paint and fittings. Thirty-two canoe advertisements were collected from Connecticut newspapers from the period 1760 to 1810. Of these, 18 canoes were made of chestnut, eight were made of pine or white pine, two were made of “white-wood” and four did not list wood type. White-wood referred to the tulip polar (*Liriodendron tulipifera*), a particularly tall and straight-growing tree that was also called the “canoe-tree.” While traveling with the French Army through Connecticut in 1781, the Abbè Robin remarked on the importance of the tulip tree. “Out of this the Indians make their canoes or troughs, formed wholly of one piece; and in this particular the English Americans have followed their example, making some of them large enough to carry more than thirty men.”³⁷ Description of canoe size in the advertisements vary from “short,” “middling,” to “large,” with some listed with their actual length and beam measurements. Lengths measured from 11 ½' to 25'; however, most fell within the 18' to 20' range and 2' to 3' wide. One chestnut canoe stolen in New London in 1765 was described as being:

*...18 or 19 Feet long, is Perry augre built, and very sharp forward; she is coloured red, has on her bow an iron plate, with a ring and panter made fast inside the bow, and an iron plate nailed up and down the inside of her stem, also a piece of iron on her stern, with rudder iron and mast and good sail, also a white oak wale: Whoever takes up said canoe and sends word to the subscriber shall receive a Dollar reward.*³⁸

Common canoe rigging included fitting a chain or rope to the bow and stern for a painter, though

one canoe was described with a ring and staple in her bow and another simply with a spike driven into the bow to attach a rope. For reinforcement of the hull, two canoes had an iron “ribbon” or band tacked around the gunwale. Several of the canoes had iron plates or straps that were nailed to the bow. One of the canoes was described as having a square stern and another was simply described as being “Indian built,” which was evidently of distinctive construction and form. One “large” pine canoe had eight rowing locks, four on each side, and four still had the owners’ paddles in them, which were typically painted and with the owners’ initials carved onto them. That canoes took hard use is indicated by various descriptions that note “patched on the inside,” “split in her side,” “split on the starboard side,” and another as having “several rents [dents].” One canoe had been patched with a “...piece of Sheet-Led on a Knot-Hole.” The 1782 probate inventory of Ebenezer Story also indicates that he was part-owner of various canoes for his maritime activities, including a “Red Canoe,” ¼ of a “Large New Canoe,” ¼ of a “Long Canoe,” and ¼ of an “Old Canoe.”³⁹

The hard use of canoes was related to their versatility as work boats. Thomas Minor’s son, Manasseh, also kept a diary, from 1696 to 1720, and used canoes, as did Joshua Hempstead, who purchased a half-interest in a canoe in 1718 and frequently noted canoes being used to transport all manner of goods, including chestnut rails, sand, boards, tar and pork. Canoes also commonly served as ferries. One large canoe ferry was recorded as carrying 34 sheep and 15 lambs. Canoes were also often used to harvest and transport oysters. In 1759 local newspapers related that “two Boys were crossing Norwich [Thames] River, near Hulburt’s Ferry, each having a Canoe deep loaded with Oyster shells, both of them overset, and one of the Boys were drowned.”⁴⁰

Working the rivers and Long Island Sound was dangerous work, and drowning, especially from canoe accidents, was not uncommon. Most accidents seem to have occurred when canoes were heavily loaded and swamped or overturned. Joshua Hempstead noted no fewer than eight drownings around New London from canoe accidents between 1712 and 1758, including at ferry crossings.⁴¹ In a chronicle of her journey from Boston to New York in the fall and early winter of 1704-1705, Sarah Knight described several often-hazardous river crossings. On her return to Massachusetts trip she related one incident where:

*...the next day wee come to a river which by Reason of Ye Freshetts coming down was swell’d so high wee fear’d it impassable and the rapid stream was very terryfying- However we must over and that in a small Cannoo. Mr. Rogers assuring me of his good Conduct, I after a stay near an how’r on the shore for consultation went into the Cannoo, and Mr. Rogers paddled about 100 yards up the Creek by the shore side, turned into the swift stream and dexterously steering her in a moment wee come to the other side as swiftly passing as an arrow shott out of the Bow by a strong arm. I staid on the ye shore till Hee returned to fetch our horses, which he caused to swim over himself bringing the furniture in the Cannoo. But it is past my skill to express the Exceeding fright all their transactions formed in me.*⁴²

Even for the most hardened and experienced mariners, navigating a canoe could be a dangerous undertaking. On a small knoll on Pine Island, which is one quarter of a mile off the coast of Groton in Long Island Sound, is a lone gravestone hidden amongst the brush. It reads: “In Memory of Mr. James Baley who was drowned Sepr 2d 1788 in the 37th Year of his Age.”



Figure 10. Headstone of James Baley on Pine Island, Groton. The headstone reads: "In Memory of Mr. James Baley who was drowned Sept 2d 1788 in the 37th Year of his Age."

His death notice in local papers related that he "...fell out of a canoe, (in which he went to draw his lobster pots) and was drowned." The Baleys were somewhat typical of the many families who combined farming and maritime activities. In James Baley's probate records, which were filed the following year, is listed his part ownership of Pine Island, a house, a barn, a garden and livestock, including a cow, a heifer, four swine and eight sheep. He also owned corks for a fishing seine, and a skiff, and held part ownership of an unfinished boat and various boat-building materials and tools. His few luxury items included a beaver hat, silver knee buckles, and a pair of silver teaspoons. Pine Island is a State of Connecticut Archaeological Preserve.⁴³

Joshua Hempstead recorded but one scow-related drowning death in his diary. The flat-bottom and rectangular-shaped scow afforded more stability than the canoe and was a very common work boat in 18th-century Connecticut. Adopted from the Dutch word *schouw*, the scow was built by nailing planks lengthwise to turned-up sideboards. It was among the simplest and cheapest boats to build and was used to transport people and all types of goods and materials. Farmers used scows extensively, as did merchants. While visiting New Haven's Long Wharf in 1786, Scottish merchant Robert Hunter, Jr. observed that sloops with a full load were "...obliged to remain at the pier, about a half mile off, and put half their cargo into scows, as the water at flood tide is only deep enough for a half-loaded brig or sloop." Hunter added that "Brigs are often obliged to unload in scows, entirely, at the pier. When they load the sloops at the long wharf, they send them off to the pier as soon as they have half their cargo in and load the other half in scows."⁴⁴

Thirty-four Connecticut newspaper advertisements for scows collected from the period 1760 to 1810 provide some clues to the types and construction of these boats. The size of scows varied considerably. One "small" scow was listed as measuring 13'-14' x 4'-5', and a "small old scow" as being 15' x 5'. Other small scows were listed as being able to carry about a cord of wood, and another small scow was noted as being able to carry three cords of wood. "Large" scows were described as being various sizes including 30' x 10', 32' x 8'-9', 32' x 11', 43' x 12'-13', and one 46'-long scow was described as "lately been planked sheathed, and put into good repair." Even much larger scows were used, with one described as 60' long and another as 65' long. A few descriptions also hint at wood type, including one with "part of the timbers and plank were chestnut," one of "white oak," and one which had "white pine corner pieces." Several of the scows were painted with red paint and one with white. Scows were typically fitted with sails and oars.⁴⁵ One scow listed for sale in New London in 1787 was described as:

A large strong-built scow, almost new, will carry 40 tons, and has large a square-sail. She is convenient for transporting lumber, or any bulky articles of West-India goods, and will be sold very cheaply for country produce, West-India goods,

*or any kinds of public securities that will pay rates.*⁴⁶

Besides his frequent use of canoes, Joshua Hempstead also had other boats that he built, sold, purchased, repaired and trimmed. In the late 1710s and early 1720s he had a whale boat that he used to get boards and “casks of cyder.” His son also used the whale boat to sail to Long Island. Hempstead built an open sloop in 1713 that was “35 foot Reel, 15 foot Beam & 6 foot Hold,” which he sold for £65. The next year he purchased a one-sixteenth ownership of a sloop, and in 1717 he loaded a sloop with wood planks and sailed to New York, where he sold the wood and the boat, and returned to Connecticut on a “perriango” or pirogue. Hempstead also extensively used scows that he owned, and at times he borrowed scows from others to transport oats, flax, barrels of molasses, staves, planks, timber, “bords,” “hoop poles,” and “railes and posts.” He once carried “6,000 shingles” in one load, and other time “3 load of hay.” Scows provided a particularly convenient means to transport salt hay, which grew around tidal marshes, and when cut and dried provided excellent feed for cattle. Livestock and horses were also transported in scows; Hempstead recorded in his diary carrying “7 cattle & a horse,” and another time, 12 cattle and a young mare.⁴⁷ Scows were also commonly used for fishing and were ideal for hauling large seines. 18th-century newspapers in Connecticut also mention that scows were used to transport stone, sand, gravel, clay and seaweed, and served as ferries. Ebenezer Story’s probate inventory lists his 1/3 ownership in a scow which was valued at £30. Ebenezer’s son Ebenezer Story II also had a scow listed in his probate inventory, which was filed in 1853. It was appraised at \$3.

Conclusions

Throughout the 18th century much of Connecticut was characterized by a sizable population of farmer-mariners who combined agriculture and husbandry with fishing, shellfishing and the hunting and trapping of waterfowl and mammals. The sea and rivers provided a great abundance of food and resources for those who lived close to the water, but inland colonists also benefited. As David McClure of East Windsor noted in 1806, “Providence Brings to our Doors, the Delicious Treasures of the Sea,” which provided what seemed to be “an inexhausted store house, [by which] multitudes of the human race are fed and supported.”⁴⁸ But by the mid-19th century, the over-harvesting of fish, shellfish, waterfowl and game animals, the creation of dams, and industrial pollution increasingly depleted these maritime resources. It became more difficult to combine farming with fishing. Fishing became a specialized occupation, joining other maritime industries in Connecticut such as whaling, shipbuilding, rope-making and manufacturing blocks and spars. Fishing was now a deep-sea, off-shore enterprise. By the end of the 19th century, many fish and water-related animal species had become virtually extinct in Connecticut waters, or so reduced they were no longer viable sources of food. While the state created a fishery commission to address the crisis, a way of life disappeared. No longer could families like the Storys depend on abundant marine resources close to home. Other occupations now supplemented farming, and many farming-fishing families went to work in the growing industries or moved west, instead of making a living from the earth, sea and rivers of Connecticut.

Endnotes

1. Daniel Vickers, "Fisheries," in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven: Connecticut Academy of Arts and Sciences, 2003), 2:127-132.

2., Duc De la Rochefoucault Liancourt, *Travels Through the United States of North America, and the Country of the Iroquois, and Upper Canada, in the Years 1795, 1796, and 1797; with an Authentic Account of Lower Canada* (London: Printed for R. Phillips, 1799), 512-13.

3. Hezekiah Frost, "Canterbury, 1801" in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven, Connecticut Academy of Arts and Sciences, 2003), 1:397.

4. Ross K. Harper, and Bruce Clouette, Report: Phase III Archaeological Data Recovery Program Ebenezer Story Homestead/Tavern (Site 114-115), Archaeological and Historical Documentation, Former Norwich State Hospital Property, Norwich and Preston, Prepared for the Connecticut Department of Economic and Community Development, Hartford, Connecticut. Archaeological and Historical Services, Inc., Storrs, Connecticut (March, 2006). All faunal materials from all the house sites were identified by Susan Trevarthan Andrews of Colonial Williamsburg, Williamsburg, Virginia., Susan Trevarthan Andrews, Report: Faunal Analysis of the Ebenezer Story Homestead Site (114-115), Site 114-118, and 114-134 Preston, Connecticut. Prepared for

Archaeological and Historical Services, Inc. Storrs, Connecticut (September, 2006). Rossiter Johnson, ed., "George Henry Story," in *The Twentieth Century Biographical Dictionary of Notable Americans* (Boston: The Biographical Society, 1904).

5. Ross K. Harper, "An Ethnoarchaeological Study of the Cisterns in Oranjestad, Sint Eustatius, Netherlands Antilles" (Unpublished Master's Thesis, College of William and Mary, 1990).

6. J. M. Steane and M. Foreman, "The Archaeology of Medieval Fishing Tackle," *Council for British Archaeology Report 74* (1991): 88-101.

7. John Jay Brown, *The American Angler's Guide, Containing the Opinions and Practice of the Best English and American Anglers, with the Modes Usually Adopted in All Descriptions of Fishing* (New York: H. Long & Brother, 1849), 165, 182. *The Connecticut Gazette*, issue 1541, (New London, May 23, 1793), 1. *The Connecticut Courant*, issue 733, (Hartford, February 9, 1799), 2.

8. James J. F Deetz, *In Small Things Forgotten: An Archaeology of Everyday Life* (New York: Anchor Books Doubleday, 1977), 125-6.

9. Levi H. Clark, "Haddam, 1808," in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven, Connecticut Academy of Arts and Sciences, 2003), 1:169. *The Connecticut Courant*, issue 1618 (Hartford,

January 25, 1796), 4.

10. Ross K. Harper and Bruce Clouette, Report: Phase III Archaeological Data Recovery Program, The 1712-ca 1770s Daniels Homestead (Site 152-128), Parkway South and Cross Road, Waterford, Connecticut, Prepared for the Connecticut Department of Transportation, Archaeological and Historic Services, Inc., Storrs, Connecticut (September, 2007). Susan Trevarthan Andrews, Report: Faunal Analysis of Daniels Site (Site 152-128), Waterford, Connecticut, Prepared for Archaeological and Historical Services, Inc., Storrs, Connecticut (May, 2007).

11. Ross K. Harper and Bruce Clouette, Report: Phase II Intensive Survey, and Phase III Data Recovery Program, Goodsell Homestead (Site 99-31), Route 22 and Village Street, North Branford, Connecticut, Prepared for the Connecticut Department of Transportation, Archaeological and Historical Services, Inc., Storrs, Connecticut (August, 2007). Susan Trevarthan Andrews, Report: Faunal Analysis of the Goodsell House (Site 99-31), North Branford, Connecticut, Prepared for Public Archaeology Survey Team, Inc., Storrs, Connecticut (November, 2001). Ross K. Harper, "The Household Economy of Lydia Goodsell: Archaeology of an 18th-Century Family in North Branford," *Connecticut Preservation News* 31:3 (2008): 4-5, 15.

12. Ross K. Harper, Bruce Clouette, and Brian Jones, Report: Phase III Archaeological Data Recovery Program at the ca. 1713 Benjamin Benedict House Site (Site 161-23), Route 7 Corridor

Improvement Project, Prepared for the Connecticut Department of Transportation, Archaeological and Historical Services, Inc., Storrs, Connecticut (June, 2007). Susan Trevarthan Andrews, Report: Faunal Analysis from the Benedict-Scrivener-Taylor House (Site 161-123), Wilton, Connecticut, Prepared for Archaeological and Historical Services, Inc. Storrs, Connecticut (January, 2007). Ross K. Harper, "The Ca. 1713 Benedict House Site, Wilton," *Society of Historical Archaeology Newsletter*. 41:1 (2008):35-36.

13. Ross K. Harper and Mary G. Harper, Report: Phase II Intensive Survey and Phase III Data Recovery Program, the ca. 1705 Ephraim Sprague Homestead (Site No. 1-12), Prepared for the Connecticut Department of Transportation, Archaeological and Historical Services, Inc., Storrs, Connecticut (December, 2007). Susan Trevarthan Andrews, Report: Faunal Analysis of the Sprague Homestead (Site 1-12), Andover, Connecticut, Prepared for Archaeological and Historical Services, Inc. Storrs, Connecticut (December, 2007). Ross K. Harper, "Historical Archaeology on the 18th-Century Connecticut Frontier: The Ways and Means of Captain Ephraim Sprague," *Museum of the Fur Trade Quarterly* 41:2 (2005), 9-16.

14. François-Jean Marquis de Chastellux, *Travels in North America in the Years 1780, 1781, and 1782*, ed. Howard C. Rice, 2 vols. (Chapel Hill: University of North Carolina Press, 1963), 1:70-1. Robert Hunter Jr., *Quebec to Carolina in 1785, 1786: Being the Travel Diary and Observations of Robert Hunter, Jr., a Young Merchant of London,*

eds. Louis B. Wright and Marion Tinling (San Marino: The Huntington Library, 1943), 159.

15. William Wood, *New England's Prospect*, originally published in London in 1634, ed. Alden T. Vaughan (Amherst, University of Massachusetts, 1977), 56. Sarah Kemble Knight, *The Journal of Madam Knight*, originally published in 1825 (Boston: Small, Maynard & Company, 1920), 37. Ennion William, "Journal of Major Ennion Williams, on his Journey to the American Camp at Cambridge, In New England, 1775" in *Journals and Diaries of the War of the Revolution with Lists of Officers. 1775-1783*, ed. William Henry Egle (Harrisburg: E.K. Meyers, State Printers, 1893), 8. William, Gregory, "A Scotchman's Journey in New England in 1771," *New England Magazine* 12 (1895): 343-352.

16. *Boston Evening Post*, issue 840 (Boston, September 23, 1751), 2.

17. Hannah Glasse, *The Art of Cookery Made Plain and Easy*, originally published in England in 1747 (Alexandria: Cottom and Stewart, 1805), 157-8.

18. Erastus Scranton, "Milford, 1816" in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven: Connecticut Academy of Arts and Sciences, 2003), 1:292.

19. (Scranton 2003, 1:292). Davis, Samuel, "Journal of a Tour to Connecticut in the Autumn of 1789, by Samuel Davis," in *Proceedings of the Massachusetts Historical*

Society, 1869-1870 (Boston: Published by the Society, 1871), 17. *Connecticut Journal*, issue 1320, (New Haven, February 14, 1793), 3.

20. (Wood 1977, 56).

21. Ross K. Harper, "Hunting, Trapping and Fowling in Eighteenth-Century Connecticut," *Museum of the Fur Trade Quarterly* 44:2 (2008): 2-16. *Connecticut Gazette*, issue 619 (New London, September 22, 1775), 3. Joshua Hempstead, *Diary of Joshua Hempstead 1711-1758*, (New London: New London County Historical Society, 1901), 377.

22. Jean-François Landolphe, "Jean-François Landolphe," in *Connecticut Observed: Three Centuries of Visitors' Observations in Connecticut 1676-1940*, eds. Richard Buel, Jr. and J. Bard McNulty (Hartford: The Acorn Club, 1999), 49.

23. David Dudley Field, "Guilford and Madison, 1832" in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven: Connecticut Academy of Arts and Sciences, 2003), 1:268. John Josselyn, *John Josselyn, Colonial Traveler a Critical Edition of Two Voyages to New-England*, originally published in England in 1674, ed. Paul J. Lindholt (Hanover: University Press of New England, 1988), 7. Manassah Minor, *The Diary of Manasseh Minor, Stonington, Connecticut, 1696-1720* (Published by Frank Denison Minor with the assistance of Miss Hannah Miner, 1915), 135.

24. (Hempstead 1901, 514). (Glasse 1805,

227-30). Amelia Simmons, *American Cookery* (Hartford: Hudson & Goodwin, 1796), 20-2. (Josselyn 1988, 78-9).

25. T. M. Hamilton, *Colonial Frontier Guns* (Union City: Pioneer Press, 1980), 125-147. T. M. Hamilton, "The Spall Gunflint" in *Proceedings of the 1984 Trade Gun Conference*, 2 vols. ed. Charles F. Hayes, III (Rochester: Rochester Museum and Science Center, 1985), 73-82.

26. Noah Webster, *An American Dictionary of the English Language*, 2 vols. (New York, 1828).

27. Jared Eliot, *Essays Upon Field Husbandry in New England and other Papers 1748-1762*. ed. Harry J. Carmen (New York: AMS Press, Inc., 1967), 47, 88-90. Samuel Deane, *The New England Farmer; or Geographical Dictionary: Containing A Compendious Account of the Ways and Methods in which the most Important Art of the Husbandry, In all its Various Branches, is, or may be, Practised to the Greatest Advantage in this Country* (Worcester: Printed by Isaiah Thomas, 1790), 162-6. (Hempstead 1901, 678, 453, 660, 510, 537, 650, 437, 560).

28. Joseph Moxen, *Mechanick Exercises or the Doctrine of Handy-Works*, first published in England in 1703 (Morristown: Astragal Press, 1989), 241-5. James L. Garvin, *A Building History of Northern New England* (Hanover: University of New England Press, 2001), 54-5. (Harper 1990).

29. Frederick Kelly, *Early Domestic Architecture of Connecticut*, originally

published in 1924. (New York: Dover Publications, Inc., 1963), 5-20. Norman M. Isham and Albert F. Brown, *Early Connecticut Houses: An Historical and Architectural Study*, originally published in 1900 (New York: Dover Publications, Inc., 1965). (Hempstead 1901, 454).

30. K. O. Emery, "European Flints in North America," in *Proceedings of the 1984 Trade Gun Conference*, 2 vols. ed. Charles F. Hayes III (Rochester: Rochester Museum and Science Center, 1985), 83-8.

31. (Deane 1790, 240). (Simmons 1796, 5-6). Alice Morse Earle, *Home Life in Colonial Days*, originally published in 1898 (Middle Village: Jonathon David Publishers, Inc, 1975), 78-9.

32. William Brownrigg, *The Art of Making Common Salt, As now Practiced in Most parts of the World*, (London: C. Davis, 1748). *Connecticut Journal*, issue 548 (New Haven, May 15, 1778), 4. *Connecticut Journal*, issue 550 (New Haven, May 29, 1778), 1. *Connecticut Gazette*, issue 764 (New London, July 3, 1778), 3.

33. James H. Trumbull and Charles J. Hoadley, eds., *Public Records of the Colony of Connecticut*, 15 vols. (Hartford: Brown and Parson, 1850-1890), 4:43-4, 9:488-9. John Warner Barber, *Connecticut Historical Collections, Containing a General Collection of Interesting facts, Traditions, Biographical Sketches, Anecdotes, &c. Relating to the History and Antiquities of every Town in Connecticut with Geographical Descriptions* (New Haven: John W. Barber, 1836), 383-6.

34. *New London Gazette*, issue 659 (New London, June 28, 1776), 4.

35. Howard I. Chapelle, *American Small Sailing Craft, their Design, Development, and Construction*, (New York: Norton & Company, 1951), 18-9, 36-7, 45-52. (Josselyn 1988, 16), (Webster, 1828).

36. Thomas Minor, *The Diary of Thomas Minor, Stonington, Connecticut 1653-1684* (New London: The Day Publishing Company, 1899), 14, 27, 28, 49, 92, 93, 172-3, 182.

37. Abbé Robin, *New Travels Throughout North America: In a Series of Letters; Exhibiting, the History of the Victorious Campaign of the Allied Armies, under his Excellency General Washington, and the Count de Rochambeau, in the Year 1781*, originally published in 1783 (New York: Arno Press, 1969), 27-8.

38. *Connecticut Gazette*, issue 95 (New London, September 6, 1765), 3.

39. *Connecticut Gazette*, issue 301 (New London, August 8, 1769), 4., *Connecticut Gazette*, issue 610 (New London, July 21, 1775), 4., *Connecticut Gazette*, issue 998 (New London, September 27, 1782), 3., *Connecticut Gazette*, issue 1011 (New London, March 3, 1783), 3. *Norwich Packet*, issue 534 (Norwich, November 18, 1784), 4., *Norwich Packet*, issue 890 (Norwich, May 8, 1791), 4.

40. (Minor 1915, 114, 116). (Hempstead 1901, 442, 477, 519, 676, 199, 567). *New*

Hampshire Gazette, issue 158 (Portsmouth, October 12, 1759), 3-4.

41. (Hempstead 1901, 290, 340, 341, 476, 477, 519, 668, 683).

42. (Knight 1920, 69-70).

43. Bruce Clouette and Ross K. Harper, Pine Island Archaeological Site, State Archaeological Preserve Documentation, Historic Resources Inventory for Historic Archaeological Sites, Connecticut Commission on Culture and Tourism, Historic Preservation & Museum Division, Hartford, Connecticut, Public Archaeology Survey Team, Inc., Storrs, Connecticut (December, 2008).

44. (Hempstead 1901, 609). (Hunter 1943, 152).

45. *Connecticut Journal*, issue 1888 (New Haven, January 5, 1804), 1. *Connecticut Gazette*, issue 1776 (New London, November 22, 1797), 4. *Connecticut Gazette*, issue 272 (New London, January 27, 1769), 4.

46. *Connecticut Gazette*, issue 1221 (New London, May 6, 1787), 4.

47. (Hempstead 1901, 66, 76, 166, 176, 20, 33, 57, 68, 328, 452, 297, 453).

48. David McClure, "East Windsor, 1806," in *Voices of the New Republic Connecticut Towns 1800-1832*, ed. Christopher P. Bickford, 2 vols. (New Haven: Connecticut Academy of Arts and Sciences, 2003), 1:39-40.