

**“LONG IN THE HAND AND ALTOGETHER
FRUITLESS”: THE PENNSYLVANIA SALT
WORKS AND SALT-MAKING ON THE
NEW JERSEY SHORE DURING THE
AMERICAN REVOLUTION**

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The American Revolution brought about shortages of important commodities in the rebelling colonies. The British empire was built on mercantile principles: colonies were plantations expected to produce a small number of goods desired by the mother country—that is, Caribbean sugar, Indian tea—and serve as captive markets for the mother country’s shipping and artisans. While the maturing Thirteen Colonies did not perfectly conform to the mercantile model, they were still dependent on a variety of imports on the eve of the American Revolution. The British blockade that accompanied the rebellion created severe shortages of needed commodities in the rebelling colonies. As documented by economic historians such as John McCusker, Russell Menard, and Richard Buel, salt was primary among those commodities most missed by Americans at the start of the Revolution.¹

This article reminds readers of the importance of the salt shortage to Revolutionary-generation Americans, and discusses

the energies that Americans and their state governments put into remedying this shortage through domestic salt-making. The article particularly focuses on the ill-fated Pennsylvania Salt Works, a project in which the Commonwealth of Pennsylvania hoped to ease the salt shortage by investing considerable funds in a large-scale salt works on the New Jersey shore. In so doing, the article also reminds readers of the amateur side of Revolutionary era governance and the insufficient processes in place to force accountability from individuals trusted with the public's money.

Background

Salt was used in colonial America for more than seasoning food. It was the critically important food preservative prior to refrigeration. Material culture historians Dorothy and James Volo determined that the amount of salt needed to preserve meat "was staggering, often equaling the weight of the meat itself." Without salt, winter food stores were compromised and starvation nearly inevitable. Salt was also central to producing favorite colonial American meats—ham, bacon, and dried fish. It was needed to cure animal skins for clothing and shoes. It was also used in medicines, fertilizers, and a host of other items. Although Americans had contemplated domestic salt production since the 1600s, there was no substantial domestic salt-making in the Thirteen Colonies on the eve of the American Revolution. In Great Britain, salt-making had grown with the expanding empire. By the mid-1700s, the forests were depleted near Cheshire, one of Britain's first salt-making centers, due to the large and near-constant wood fires needed to boil large amounts of salt brine into usable salt.²

Even before the British instituted a naval blockade of the rebelling colonies, leading Americans were aware of vulnerability created by their dependence on imported salt. On July 31, 1775, the Continental Congress took up the issue, forming a committee "to inquire into the cheapest and easiest methods of making salt in these colonies." The accomplishments of this committee are hard to discern from surviving records but the Continental Congress returned to the issue toward the end of the year. On December 29, the Congress adopted a resolution in which it "earnestly recommended" that each colony "immediately promote, by sufficient public encouragement, the making of salt."³

In the capital city of Philadelphia, interest in salt-making was piqued in early 1776. Robert Treat Paine, a Massachusetts delegate to the Continental

Congress, published *The Art of Making Common Salt*, an exhortation for American salt production and a primer on salt-making. Paine noted: “The making of salt in America . . . has been too long neglected from a prevailing disposition in the Americans to manufacture nothing for themselves which could be imported from abroad.” The salt-making process, as Paine laid it out, was simple enough: (1) At high tide, trap salt water behind gated earth works; (2) pump that water into large drying pans; (3) scoop the resulting brine into kettles; and (4) boil the brine into usable salt. He also advised on finding the right piece of land for constructing a salt works:

Choose a low plot of land of ground adjoining to the sea, distant from the mouths of large rivers, but nigh a convenient harbor for boats or larger vessels. This ground must be free from springs of fresh water and no ways subject to land floods, and, if possible, should have a clayey bottom; it should also be defended from the sea either by banks of rising ground or by an artificial mote raised for that purpose.⁴

In March and April 1776, at least four colonies—New Jersey, Maryland, North Carolina, and Connecticut—all passed acts to encourage domestic salt-making. The Continental Congress followed by establishing a bounty for domestic salt on April 17; it also called on local Committees of Observation to be vigilant in monitoring salt prices and pressuring price gougers. Soon after, Congress passed a resolution encouraging the provincial conventions and congresses to grant militia exemptions to domestic salt-makers.⁵

However, salt shortages and price gouging worsened. On May 15 and 16, the New Jersey Council of Safety heard a variety of complaints on the subject. It warned those people in possession of salt to “consider the poor people at this time of calamity, and not [charge] extravagant prices on such that has been procured at low rates, particularly salt.” In Philadelphia salt prices rose rapidly. On May 28 Reverend Henry Muhlenberg noted that the price of a bushel of salt had risen from £2 to £7 and that “the people push and jostle each other whenever there is a small quantity of salt to be found.”⁶

On May 30, 1776, the Continental Congress decried the “avaricious and ill-designing men” that charge “a most exorbitant price for salt.” It called on each state to “regulate the price of salt as to prevent unreasonable exactions on the part of the seller.” The Pennsylvania Committee of Safety, meeting in Philadelphia, followed a precedent already set in North Carolina by establishing salt prices and promising to punish hoarders and price gougers. That same

week, the Pennsylvania *Ledger* printed instructions on how to make salt “from the water of our bays.” Only weeks later, Marylanders in Dorchester County rioted over the lack of salt, plundering the stores of alleged hoarders. Before the Declaration of Independence was signed on July 4, at least three salt works were operating—at Long Island, New York; Beaufort, North Carolina; and Quivet Neck, Massachusetts. But for Philadelphians lacking access to their own saltwater, the nearest land well situated for salt-making was on the Jersey shore.⁷

The Pennsylvania Salt Works

The interest in Philadelphia over salt—proven by the resolves of the Continental Congress and rising salt prices—prompted the Pennsylvania government into action. On June 10 the Pennsylvania Committee of Safety endorsed a plan proposed by a Philadelphia merchant, Thomas Savadge, “for making annually on the seacoast about sixty thousand bushels of salt.” In retrospect, the claim should have struck the committee as extravagant. Thomas Savadge had already failed in an attempt to establish “iron mongering” in southern New Jersey a few years earlier. In 1776 Savadge was living modestly; his entire estate was valued at £62. Despite his lackluster business history, the board was impressed by Savadge’s proposal, which included such grandiose innovations as windmills and “sun pans” for the proposed works, rather than the more common boiling pans. The committee concluded that “[We are] of the opinion that the necessary works may be completed in a short time, at an expense not exceeding two thousand five hundred pounds.” They bankrolled Savadge’s salt-making venture with an initial advance of £400 to Savadge on June 24.⁸

It appears that Savadge was already on the Jersey shore, at Toms River, by the time committee officially endorsed his plan. On June 25 he purchased 500 acres of salt meadow from Joseph Salter for £450. In so doing, he had already overspent his initial advance from the Committee of Safety. In July and again in September, Savadge purchased or leased more land from Salter for £150 and £600. Concurrently, Savadge made dozens more purchases from numerous people in the area—food, building supplies, horses and oxen, rafts, and several purchases of spirits. He hired eleven laborers by August, and eventually employed twenty by October. But only a few laborers stayed with Savadge for more than a few months. The wages were modest—£6 a month

for a common laborer—and the long days of hard labor in the salt marshes were, no doubt, unpleasant. Up and down the shore, salt-works owners complained that their laborers were prone to desertion or sickness. Savadge’s labor problems were compounded by his inability to pay laborers in New York money, the preferred currency on the New Jersey shore. One early laborer, Benjamin White, later recalled his disappointment that Savadge paid him “with but little money of value, it being Continental and old Jersey money.”⁹

In Philadelphia, the salt shortage continued. On August 24, for example, Robert Morris, on behalf of the Pennsylvania Convention, wrote a letter printed in the Philadelphia newspapers that scolded merchants for price gouging. He particularly mentioned salt as “most dear” and subject to some of the worst price gouging.¹⁰ The worsening salt shortage pushed the New Jersey Convention toward sponsoring salt-making. It loaned Samuel Bard of Shrewsbury £500 “for the term of two years without interest” in exchange for Bard selling the resulting salt back to the New Jersey government for \$1 a bushel. The New Jersey government also promised to absorb half the losses “if any of the works shall be destroyed by the enemy.” It issued Bard militia exemptions for up to ten laborers. A month later, the New Jersey Assembly offered similar terms to three more Shrewsbury residents eager to start a salt works—William Parker, William Corlies, and Richard Lippincott—with the further inducement that the loan would convert to a grant if the salt works were producing ten bushels of salt a day within ninety days. Meanwhile, in nearby Delaware, the state assembly loaned Colonel John Jones the money to start up a state-supported salt works in Sussex County.¹¹ The Pennsylvania Salt Works would have to compete for supplies and laborers with many other salt works.

The militia exemptions granted to the New Jersey salt-works owners immediately drew the attention of the Pennsylvania government, which requested similar exemptions for laborers at the Pennsylvania Salt Works on August 26 and again on August 29. John Hart, the Speaker of the New Jersey Assembly, informed the Pennsylvania government a few days later that his state would not grant militia exemptions for New Jersey citizens employed at the Pennsylvania Salt Works. He suggested that wages at the Pennsylvania Salt Works be raised to a level where laborers could afford the fines for militia delinquency out of their pay and continue at the works.¹² Though polite in its tone, Hart’s rebuff showed that the State of New Jersey was more concerned with protecting its salt-work loans than supporting Pennsylvania’s large scale salt-making experiment.

Despite the lack of support from the New Jersey government, progress was being made at the Pennsylvania Salt Works. On October 12 Savadge reported to the Council of Safety that "I have nearly completed a boiling house, two drying houses, [and] a mill for the pumps." He asked the Pennsylvania government for additional funds to construct a log fort to protect the works in the event of an attack. The war was going badly for the Continental army, and fears were high the British might attack the port of Toms River and the nearby Pennsylvania Salt Works. Two weeks later, October 26, Savadge reported completing a 169-foot boiling house, two drying houses, a kitchen, a lime house, and mill. But he was less than upbeat: he was £600 in debt to Joseph Salter and in need of funds and supplies. The lack of militia exemptions for his laborers remained a problem: "Many inconveniences arise from ye times, my people being drafted [into the militia] every month & not a sufficient number to be got; [this] has thrown me much behind my expectations of getting these works erected." Savadge also noted the recent appearance of a four-ship British flotilla off Toms River. "I expected a visit from them and believe nothing prevented it but a very low tide." Savadge reminded the committee that both his men and the local militia were "in want of arms."¹³

Savadge's letter and the course of the war (including the expected advance of the British army into New Jersey) raised new concerns for the safety of Pennsylvania Salt Works. On November 2 the Pennsylvania Council of Safety ordered "a guard of twenty-five soldiers, properly armed, and supported by two howitzers . . . be sent to the salt-works at Toms River." The council also wrote the Continental Congress to request that it pressure the governor of New Jersey, William Livingston, to assign "two companies of militia to guard the salt-works near Toms River." Congress responded three days later by writing Governor Livingston and requesting militia to guard the Pennsylvania Salt Works—although Congress, eager to appear even-handed, also noted the need to protect the salt works near Shrewsbury.¹⁴

However, it is not clear that any troops or militia made it to Toms River. As a stopgap measure, Robert Morris of the Pennsylvania Council of Safety ordered Captain Rice's row galley to leave Philadelphia for Toms River where "she would not only save the salt works until a proper land force can be appointed, but would also be very useful in retaking some of the prizes the [British] men of war sent along shoar [*sic*]." Finally, on November 19, Governor Livingston complied with requests from the Pennsylvania government and Continental Congress and ordered two companies of Hunterdon County

militia to Shrewsbury and two companies of Burlington militia to Toms River to protect the salt works at those places.¹⁵

In early December, the British army pushed into New Jersey and the Continental army retreated into Pennsylvania. Central New Jersey fell under British control. Loyalists rose up and seized the horses, wagons, and guns of rebels (they called themselves Whigs). Prominent Whigs were arrested. Armed Loyalist groups were organized into the New Jersey Volunteers, a Loyalist corps of the British army. They spread out across the countryside to enforce the counterrevolution. Any militia at the Pennsylvania Salt Works melted away.¹⁶

The counterrevolutionaries reached the Pennsylvania Salt Works on December 23, 1776. Savadge had heard rumors that the salt works were to be destroyed by an advancing column of Loyalists, so he rode out to meet Lieutenant Colonel John Morris of the New Jersey Volunteers. Savadge reported success in persuading Morris to save the salt works: “By informing him that ye works were not altogether public property, he politely told me he would not destroy them.” A few days later, Savadge reported, “Two noted Tories, Joseph Allen and John Williams, came with orders from General Skinner [Morris’s senior officer] to seize the works for the King’s use, and accordingly put an R [for Royal] on each building.” Savadge was turned out but apparently not harassed beyond that. He stayed in the Toms River area, likely observing his salt works from a distance. There is no evidence to suggest that the Loyalists harmed the salt works. They departed in early January following the retreat of the British army after the battles of Trenton and Princeton.¹⁷

However, momentum on the Pennsylvania Salt Works was not easily restored. The laborers were now gone. A frustrated Savadge wrote on January 18, 1777: “I have not been able to collect them together for reason of not having but Continental money to pay them. . . . They are chiefly poor men from large families, they cannot get provisions for their families with Continental money.” Savadge also remained concerned about the safety the salt works, writing: “Lord Howe has a galley near complete that carries a brass 18 pounder in her bow and a 12 pounder in her stern . . . that will destroy the works if not prevented by some vessels of the same force.”¹⁸

The security of the Pennsylvania Salt Works remained a concern for the next several weeks. On January 27 Savadge recorded that “a small sloop or tender came into the inlet, manned chiefly by Tories.” It carried off a vessel owned by local Whig James Randolph. On February 3 the Tories returned

and took the rigging and equipment for the stolen vessel. There was no military response to either of these incursions. Alarmed by Savadge's reports, the Pennsylvania Council of Safety again provided men for the defense of the salt works. On the fifth it resolved: "that a Captain and a company of the Pennsylvania regiment, with two pieces of cannon, be sent into New Jersey for protection of the salt works erected there at the expense of this State." But finding troops for this assignment proved challenging, and there is no evidence to suggest the troops were sent. Two weeks later, Robert Morris, for the Pennsylvania Board of War, counter-proposed sending a galley to defend the salt works instead. But through a series of miscommunications and delays, it appears that the galley did not actually depart for Toms River until March 27.¹⁹

The local New Jersey militia also provided some security for the Pennsylvania Salt Work and the nearby village of Toms River, but Savadge was not impressed:

The militia in this part of the country is by no means calculated for the defense thereof; for half of them are Tories and the rest but little better. I am of the belief that if this part of the country is to be defended, it must be by Continental troops who know their duty, or militia of another state.

Savadge also reported on a rumor that the armed Loyalists of Colonel John Morris were expected to return soon, and warned "if this is true, [then] the works are gone." Just a few days after this report, the security of the work worsened further. On February 15 Savadge reported, "Col. [David] Forman has ordered the militia from this place to Freehold," leaving the area totally unprotected.²⁰ The reformed Monmouth militia aggravated the already difficult task of securing laborers. Savadge reported, "I find it very difficult getting my people together; some are gone to the regulars, and some are hid and run away, others joined their respective militia companies on duty."²¹

In March 1777 the New Jersey government implemented plans to make it easier for salt works to retain laborers. The Legislature granted Colonel David Forman ten militia exemptions for laborers at the salt works he co-owned near Barnegat. Three days later, comparable militia exemptions were granted to all other salt works that would be "serviceable to the State" of New Jersey. It appears that this phrase excluded the Pennsylvania Salt Works

from the exemptions, which existed to perform a service to a different state. On March 21 James Mott, a New Jersey assemblyman and leading citizen from Toms River, wrote to Governor Livingston, to call attention to the disparate treatment. Mott wrote:

Mr. Thomas Savadge of the Pennsylvania Salt Works hath not been able to complete the same by reason of his workmen being frequently called out for the militia . . . if he cannot keep his workmen, he must be obliged to drop the whole project, to the great loss of the owners and public in general.

Mott predicted that the Pennsylvania Salt Works might produce 100 bushels of salt a day in short order if the militia exemptions were granted, and concluded, “As salt is so much wanted, I make no doubt that your Excellency will grant him such power as in your indulgence.” When Mott’s letter went unanswered, Mott sent a follow-up ten days later.²²

The Pennsylvania government also sought to change the New Jersey government’s position. On April 4 Clement Biddle of the Pennsylvania Board of War complained to John Hancock, president of the Continental Congress, that “His Excellency, Governor Livingston, refuses to grant any exemptions unless it be recommended by Congress. We therefore recommend that you give a few lines to the Governor for that purpose.” The Pennsylvania Council of Safety then wrote Governor Livingston requesting forty militia exemptions for salt-work laborers. That same day, the Continental Congress debated whether or not to intervene on Pennsylvania’s behalf, recording:

Motion from Pennsylvania for recommendation to the Governor of New Jersey to excuse 40 persons employed by Pennsylvania at the salt works in the Jerseys, proposed by North Carolina to amend by adding “if not inconsistent with their laws.” After much debate the amendment was agreed.

The watered-down recommendation from Congress gave Governor Livingston an easy way to deflect Congress’s request. He wrote back to Congress on April 12, “The exemptions above recommended are inconsistent with the militia laws of this State.” He also noted that if Pennsylvania wanted to send its own citizens to labor at the salt works, “care shall be taken to have them exempted.”²³

Months later, Savadge was still complaining about the lack of militia exemptions. In July he reported on “the tediousness and delay of erecting the works arises from not getting an exemption for my people for military duty in the militia & having no guard for their defense.” He further described, “It takes half of my time riding through the country looking for fresh hands, and when I have had them for two weeks, the militia takes them away.” Account books for the salt works confirm that Savadge had few laborers throughout 1777, and sickness was common among those who were there. Captain John Nice of Pennsylvania, a galley commander guarding the salt works, worried over the men’s health: “The water is bad, it will be necessary for the men to have spirits or I fear they will get sick, and we have no doctor nor any medicines for the men’s health, nor vegetables of any kind; there is none to be got here.” Nearby, at the competing Union Salt Works, Colonel David Forman lodged a similar complaint: “the troops on this station are very sickly.”²⁴

As the summer of 1777 dragged on, progress at the Pennsylvania Salt Works continued, but slowly. On August 22 Savadge reported, “My millwrights have nearly completed the mill and pumpworks, it shall go to work with two or three pans in a few days.” But Savadge was again out of funds and requested another £500 of money.²⁵

The salt shortage in the middle colonies remained. Captain Francis Wade, a Continental commissary officer stationed at Allentown, complained of the “extravagant price” of salt. Colonel David Forman also complained of the “exorbitant price of salt and the great probability of its further rise.” In August 1777 John Adams wrote to Abigail from Philadelphia, complaining that salt prices had risen to \$27 a bushel despite all of the “salt water boiling all around the coast” of New Jersey. He joked that Philadelphia was near empty, “all the old women & young children are gone down to the Jersey shore to make salt.” George Washington believed the domestic salt works so important that he excused the New Jersey militia from joining his army in October 1777, writing two militia leaders that “these works are so valuable to the public that they are certainly worth your attention.”²⁶

In New Jersey Governor Livingston reminded his state’s Assembly that “The scarcity of salt is a serious consideration.” He called for the New Jersey government to support a new public salt works and “to appoint proper persons necessary to distribute the commodity.” But there were limits to how far the Revolutionary governments would go to support salt-making. That September, the Continental Congress received “a memorial from David

Forman and his partners praying for a guard of one hundred men to protect a salt works, which, on obtaining such a guard, they plan to erect.” The petition was dismissed the same day. Assemblyman James Mott introduced two bills in the New Jersey Assembly on September 24 to grant ten militia exemptions to laborers at the Pennsylvania Salt Works and another Pennsylvanian-owned salt works, the Independent Works at Little Egg Harbor. The Assembly tabled the bill on the Pennsylvania Salt Works and rejected the bill for the Independent Salt Works. New Jersey and other states fixed salt prices, though there is little reason to think these government-imposed price schedules were enforced.²⁷

Discussion continued through 1777 between New Jersey and Pennsylvania leaders about militia exemptions for the workers at the Pennsylvania Salt Works. By September 13 Governor Livingston was more sympathetic, admitting to Thomas Wharton of the Pennsylvania Board of War that “the frequent calls of the workmen employed [at the Pennsylvania Salt Works] to serve in the militia is extremely vexatious.” He expressed support for a bill that would allow for militia exemptions of the salt-works laborers provided they were formed into a militia company and prepared to fight on an alarm. On October 7, 1777, the New Jersey legislature passed “An Act to Encourage the Making of Salt.” The bill was explicitly for the benefit of “the works near Toms River” and permitted militia exemptions for any number of laborers at the works, as long as the salt-works manager (Savadge) drew up a list of men and informed the local militia captains. But the laborers would need to be armed by Pennsylvania, drilled as a militia unit, and responsive to militia alarms. A few weeks later, the New Jersey Legislature granted all New Jersey salt works the same exemptions.²⁸

With the militia exemptions finally secured, the Pennsylvania government now expected results. On October 26 William Crispin of the Council of Safety wrote of Thomas Savadge, “He informs me that he has salt by him & is daily making more . . . desires that I send him a cooper for that business.”²⁹ But ten days later, Thomas Wharton of the Council responded skeptically:

The Council proposes to send a prudent man to the salt works to send forward to the State what salt is made. . . . I therefore hope and expect that Mr. Savadge has a considerable amount made and will exert himself in all respects to serve the public, who expect a great measure from the large amount of public money already expended.

The council then sent James Davison toward Toms River to provide “a distinct account of the matters there.” Perhaps fearing Davison would be deceived, the council alerted militia colonel John Cox of Davison’s mission and encouraged him to be helpful to Davison.³⁰

An unhappy Thomas Savadge wrote back to Thomas Wharton on November 11. He acknowledged the passage of the law granting militia exemptions but explained that it did not solve all of his labor problems. Specifically, he was still short: six carpenters, a smith, a bricklayer, a wheelwright, three cart men, and two guards. He was also short on wood (salt works used large amounts of wood to fuel the fires that boiled salt brine into usable salt). He reported entering into an agreement to harvest wood from the land of James Mott for \$3,500 and sent James Griggs of Toms River to Philadelphia to collect the money. Savadge also requested permission to keep the arms of the Pennsylvania sailors assigned as guards when they left.³¹

A week later, on the nineteenth, Davison left for the Pennsylvania Salt Works with instructions from Council of Safety to keep the purpose of his mission confidential, “lest the forestallers get notice of it.” The orders also noted the continued need for salt in Philadelphia and instructed Davison to ship all the salt presently at the works to Philadelphia. If the works were still not productive, he should “purchase [salt] from other salt works as will make up the deficiency.” Davison was also given a letter from Thomas Wharton, which would explain his mission to Savadge. Wharton’s letter bluntly informed Savadge of Council’s disappointment:

We had reason to believe you would have furnished this State long since with considerable quantities of salt, we have been most egregiously disappointed and are almost induced to give up the matter and pursue some of other method to furnish this State with that necessary article.

The letter further informed Savadge that Davison “has directions from the Council to inspect the books and papers relating to the works.”³² Davison apparently reached Toms River, inspected the salt works, and reported back to the council. Unfortunately, the contents of his report are unknown.

Even after dispatching Davison, the Pennsylvania government was not prepared to abandon the works—the sunk costs were probably too high. On January 16 it detached Commodore Hazelwood of the state navy with thirty men to serve as the next guard at Toms River. By coincidence, on that same

day, Savadge wrote the Council of Safety a conciliatory letter. He admitted to “unaccountable delays” in getting the works operational and promised that “if it is not the design of the Board to sell the works” he could produce 30,000 bushels of salt in the next year. Savadge claimed to have been helpful and supportive of Davison; “he is empowered and instructed to do everything effectual in attaining that so much desired end.” But a skeptical council had lost confidence in Savadge. It reminded Davison that the salt works “have not produced any salt, tho’ a very considerable sum has been invested.” Davison was then instructed: “Take up the direction of them as fully as the Council would do were they present.”³³

Not surprisingly, Savadge’s next letter to the Council of Safety was hostile. On February 5 Savadge expressed anger that Commodore Hazelwood’s guard had not yet arrived, and further noted that “such men as Commodore Hazelwood could furnish are not the men I want, neither will I pretend to carry on the works with such men.” Savadge was equally blunt about Davison’s usurpation of control:

The appointment of Mr. Davison as an agent here can be of no use to me or the works, it will be an additional expense to them, and there is no use for such a person here; furnish me with proper men and I will take care of the rest.

Savadge also challenged the board’s appointment of Davison on legal grounds: “I think, agreeable to my contract, I can have no superintendent over me but the Council themselves.” Though Savadge promised that the works could be producing salt in just two weeks, he was ready to quit: “I cannot think of carrying them [the works] on any longer, for it is only deceiving the publick, myself and my family, and getting me an ill name for what I have not deserved.”³⁴

Despite the threatened resignation, Thomas Savadge stayed on. In April, the long-feared attack against the salt works materialized, but the attack took place against the rival Union Salt Works near Manasquan, ten miles north. On April 1 a raiding party of 135 Loyalists and forty British regulars landed at Manasquan Inlet, “burnt the salt works, broke the kettles, stripped the beds of the people there. . . . The next day, they landed at Shark River and set fire to two salt works there.” The local militia raised only fifteen men to oppose the raiders. After this event, Savadge sent two letters to the Pennsylvania government. First, he described the raid and warned that the

raiders “intend these works a visit very soon.” Then Savadge offered a litany of worries. He complained about lack of laborers: “I have but a few men at the works, and them going to leave me because of the above account.” He fretted over his lack of money: “I am without cash to pay the people or provision of any kind.” And he took a subtle dig at James Davison: “I have heard nothing of Mr. Davison since he left.” In his second letter, Savadge again requested a guard and laborers: “Am not able to make any salt for want of hands . . . in all likelihood they [the Loyalists] will attempt to destroy them [the works] in a few days.”³⁵

Savadge’s letter drew a prompt and terse reply from the Council of Safety. The council stated that it refused to send a guard “as there does not appear to be any propriety from the many considerations, these works have been long in the hand and hither been altogether fruitless.” The council noted the continued lack of salt from the works, which “greatly discourages the Council from pursuing the business any further until they are satisfied that there is a reasonable prospect of something effectual being done.” The council further demanded, “You are hereby directed to lay your accounts before the Council as soon as may be.”³⁶

After this, correspondence between Savadge and the council discontinued until the end of the year, when Savadge, now in Philadelphia, penned four evasive and angry letters in short order. On November 25, 1778, Savadge wrote to the council apparently in response to inquiries made days earlier. Savadge claimed to have lost certain salt-works accounts, saying they disappeared with a courier who brought the records from Toms River. Savadge offered little assistance in finding this mysterious courier, writing, “I cannot recollect his name.” Savadge also requested funds to cover continued expenses at the salt works, including feed for sixteen pigs, two cows, and a horse. On December 7 Savadge wrote to again request money: “the sum of five hundred pounds should be sufficient to complete the five pans and carry them on so far as to satisfy your Honor and Honorable Council of the propriety and consequence of the works.” Savadge asked to settle accounts and get his investments paid out if the council would not support the works any longer. The next day, Savadge apologized for a bookkeeping error: “I must confess shame . . . by inadvertently imposing a falsehood” and being unable to produce his final agreement with James Mott. Savadge requested that the council appoint “a committee of judicious men” to consider his conduct as manager of the salt works and insisted, “I have done everything in my power

to carry the works into execution, agreeable to any instructions I have ever received." On the twelfth, Savadge wrote his final letter to the council:

I beg your pardon for interrupting you so often, but necessity has no law. I have family in town, and I have not one stick of wood for them to burn nor money to buy any; I have been here for almost seven weeks waiting to know when I am able to settle the ration bill and sundry other matters.

He concluded, "I beg to know when I am to settle . . . for my family cannot be wanting for the necessities of life."³⁷

Savadge apparently returned to the salt works in January. He continued making obligations: These included paying Samuel Cooper, a fellow Philadelphian and owner of a salt works to the south, £35 for boarding his horse, and correcting previous accounting errors by obligating £15 and £22 to local merchants James Randolph and Daniel Wilson. It appears that all routine business at the Pennsylvania Salt Works stopped, at least to the degree this can be gleaned from the surviving account books of a disaffected owner. Recognizing that his favorable business relationship with Savadge was at a close, James Mott advertised the sale of 300 acres of land at Toms River, noting the Pennsylvania Salt Works as one of its boundaries, and suggesting of the land "the situation is most advantageous for erecting a salt works." A month later, Joseph Salter, another large landholder who had leased land and goods to the Pennsylvania Salt Works, advertised the sale of 1,300 acres of land near Toms River, calling his plot "as well situated for making salt as any in New Jersey." Savvy locals understood that the patronage of the Pennsylvania government was over and they were now selling off adjacent land for whatever it might be worth.³⁸

Finally, on November 5, 1779, the Pennsylvania Council of Safety resolved to sell the Pennsylvania Salt Works, two years after the council first expressed doubts about the project. The council noted, "That the salt works belonging to this State in New Jersey have been attended with great expense and no advantage to the public, and the manager being dead." Savadge's passing did not generate an obituary in the Philadelphia newspapers—suggesting he died impoverished and in disgrace. The Council of Safety instructed Colonel Hagner to oversee the sale.

The Pennsylvania government's salt-making experiment lasted over three years. It appears that the salt works produced a grand total of twenty bushels of salt in that time, one-thirtieth of what Savadge originally projected the salt works would produce one year. The sale of the Pennsylvania Salt Works was advertised in the *Pennsylvania Packet* on November 11, 1779. The advertisement made no mention of the works' failure, and instead made virtue of their grandiosity by noting the "extensive plan" that was "calculated to produce a great quantity of salt." On December 31, 1779, the Pennsylvania Salt Works were purchased by John Thompson of Burlington County, New Jersey. Over the next two years, they produced 15,000 bushels of salt—far less than Savadge had predicted, but a respectable output nonetheless. On March 24, 1782, Loyalists attacked Toms River and destroyed the works. They were never rebuilt.³⁹

Other Salt Works on the Jersey Shore

Thomas Savadge was not the only the Pennsylvanian to stake his reputation and fortune on salt-making along the Jersey shore. South of Toms River, at Little Egg Harbor, Philadelphians John Little and Samuel Cooper also owned a salt works. Little was a blacksmith who made his own kettles and lived at the works; Cooper was apparently the financier who traveled back and forth to Philadelphia. In January 1778 Cooper was so optimistic about the success of his works that he purchased a large tract of land nearby for £10,000. Like Savadge, Cooper worried about the safety of his investment. On news of a British incursion against Little Egg Harbor in October 1778, he told Little to move all items of value inland "for depend on it, the works will be destroyed and there should no time lost." Indeed, Captain Henry Collins of the Royal Navy reported that his men razed three salt works during that incursion, but it is impossible to know if this included the Copper-Little works. After the attack, the *New Jersey Gazette* speculated that other salt works would soon fall: "They have, it is said, bent their course towards Toms River, in order to destroy the salt works there." As late as 1782, indigenous Loyalist bands of Pine Robbers attacked privateers and businesses owned by men associated with the Continental cause. Poor documentation makes it impossible to know if Pennsylvanian salt-work owners were more likely to face attack than New Jerseyans, but it seems likely.⁴⁰

Further south, at Great Egg Harbor, Thomas Hopkins of Philadelphia established the Friendship Salt Works in 1780. Like Thomas Savadge, Hopkins endured a litany of labor problems, writing on different occasions: “the wood cutters refused to cut,” “3 wood cutters eloped the day before & stole an axe,” “no wood cutters at work this day,” and “the wood cutters said they would work no more as the weather is so hot & the mosquitoes so thick.” Hopkins was also plagued by shortages of provisions. Despite these difficulties, the Friendship Salt Works did manage to produce ten to twelve baskets of salt on most days, enough to send two wagons to Philadelphia every six weeks.⁴¹

New Jersey historians have profiled different salt works on the Jersey shore during the American Revolution. Aggregating the work of these different historians is difficult, as is separating out duplicative and nonverifiable information in their writings. Nonetheless, it appears there were at least seventeen salt works started on the Jersey shore at one point or another during the war (see table 1). At least nine of these salt works—including each one north of Toms River—were destroyed by British/Loyalist raiding parties.⁴²

Only one of these salt works rivaled the Pennsylvania Salt Works in scale and expectation. The Union Salt Works at Manasquan (present-day Brielle) were founded by Colonel David Forman in late 1777 amid a flurry of correspondence with Governor Livingston and George Washington. Originally Forman requested a massive £20,000 advance from the Continental Congress in exchange for selling salt exclusively for the support of the Continental army. Although Congress never approved, the project was begun. Forman was already under censure from the New Jersey Assembly for using his Continental army regiment as laborers at a salt works he co-owned near Barnegat, where the men harvested wood from the neighboring land of Trevor Newland, also a salt-works owner. In January, Forman moved his soldiers to the Union Salt Works where, presumably, they were put to work building the works. By late March Washington had no choice but to remove the men and transfer the command of Forman’s regiment away from Forman “to avoid the imputation of partiality and cause of censure.” Just a week later, the Union Salt Works and the nearby salt works at Shark River were razed by a British/Loyalist raiding party. The ruined salt works were advertised for sale March 1779. They were sold, partially rebuilt, and operated at a reduced capacity afterward.⁴³

TABLE I. The Jersey Shore's Revolutionary War Salt Works

Name	Owner/Manager	Location	Comments
River Works	Samuel Bard ^a	Shrewsbury River	Destroyed 1777
Unknown	David Knott ^a	Shark River	Destroyed 1778
Union Salt Works	David Forman and others	Manasquan	Destroyed 1778; sold and repaired
Unknown	James Parker and others ^a	Manasquan Inlet	Destroyed 1778
Randolph's	James Randolph	Mosquito Cove	
Pennsylvania Salt Works	Thomas Savadge	Toms River	Sold 1779, destroyed 1782
Unknown	Samuel Brown	Forked River	Destroyed 1782
Unknown	Trevor Newland	Waretown	Destroyed 1782
Congress Works	David Forman and others	Barneгат	
Unknown	Unknown	Tuckerton	
Bartlett's Works	Josiah Bartlett ^a	Little Egg Harbor	Destroyed 1778
Falkinburg Island Works	Unknown	Little Egg Harbor	Destroyed 1778
Independent Salt Works	Nathaniel Petit	Absecon Island	
Friendship Salt Works	Samuel Cooper	Great Egg Harbor	
Unknown	Unknown	Townsend's Inlet	
Unknown	Unknown	Turtle Gut Inlet	
Unknown	Unknown	Cold Spring Inlet	
Unknown	Unknown	Seven Mile Beach	

^aOwner is presumed

Despite the risks, salt works attracted investment from across New Jersey. Colonel John Neilson of Middlesex County invested \$2,800 in a salt works near Toms River that appears to have been managed at least some of the time by Major John Van Emburgh, also from Middlesex County. These works were plagued by labor shortages and mosquitoes but did produce salt. By November 1782 they were being manned by local residents who gave one-third of the proceeds to Neilson and Van Emburgh. Colonel Joseph Ball of Gloucester County reportedly became one of New Jersey's wealthiest men based on his privateering and salt-making investments during the war.

General Nathanael Greene of the Continental Army was a co-investor in Ball's ventures.⁴⁴

The Need for Salt Works Later in the War

The character of the American Revolution changed markedly in 1778. The entry of France into the war weakened the British naval blockade by placing a rival fleet in American waters and by forcing the British to divert ships to protect other parts of the empire. McCusker and Menard suggest that a “fairly successful” British blockade through 1777 gave way to a period of “flourishing commerce” in America starting in mid-1778. Along the Jersey shore, privateer and merchant vessels multiplied. A survey of New Jersey and Pennsylvania newspapers, starting in summer 1778, shows several imported salt advertisements, where few had existed before. Indeed, McCusker and Menard suggest that salt prices started falling in 1778.⁴⁵

Despite the improving conditions, it appears that there was still a market for domestic salt into 1778 and beyond. In an October 1778 letter, Philadelphia merchant and salt-works co-owner Samuel Cooper noted an incredible markup for salt between the Jersey shore, where it sold for £8 a bushel and the Philadelphia price of £35. Another source suggested that \$15 of salt at Toms River sold for \$35 at Morristown. There are other examples of significant price differences between the Jersey shore and inland markets.⁴⁶ Despite this, the New Jersey Assembly defeated a bill in October 1779 to extend militia exemptions for salt workers. While salt supplies improved, drought periods remained. In November 1779 Colonel John Cox wrote Nathanael Greene from Egg Harbor complaining that salt prices had spiked again, reaching \$100 a bushel, and further noting, “and little to be had even at that.”⁴⁷

Conclusion

By any measure, the Pennsylvania Salt Works were a failure. Thomas Savadge dreamed of a grand salt works without realistically considering the supply chain, labor, or capital needed to support the project. The other large-scale salt works on the Jersey shore, the Union Salt Works near Manasquan, were also a failure. Meanwhile, the smaller salt works up and down the shore

produced steady, if modest, amounts of salt. There is no reason to think that these small salt works eased the national salt shortage. The reopening of the sea lanes in late 1778 likely changed the salt supply more than domestic salt production. The New Jersey Legislature's decision to let the salt-making militia exemptions expire in 1779 certainly suggests as much.

Nevertheless, the combination of salt-making and privateering brought large numbers of people and capital to the Jersey shore for the first time. Before the war, much of the land along the Monmouth/Ocean County shore was held by the Board of East New Jersey Proprietors—but large tracts land were sold off to private salt-works investors in 1777 and 1778. Shallow harbors like Toms River had no more than a few dozen residents and no large vessels in 1776, but these ports ended the war with warehouses, merchant vessels, and channel markings and pilots for navigating their tricky inlets. Previously low-value salt marshlands were now “improved” with buildings and industry that would keep people on the shore forever afterward. And New Jerseyans continued investing in domestic salt works after the war.⁴⁸

While Savadge's plans were impractical and his projections fanciful, the problems he faced were real and common. Labor shortages plagued not just him, but salt works up and down the shore. Further, Savadge's worries about the safety of the Pennsylvania Salt Works were well founded. Monmouth County hosted over 100 battles and skirmishes during the war, the large majority along the shore. Local militia attempted to provide security, but they were undermanned against well-armed raiding parties. In January 1778 an anonymous New Jersey Loyalist reminded a British official in New York of the salt works and their vulnerability, “You know that these works stand near the waterside [and] that 200 men might destroy them all.”⁴⁹

The failed experiment at the Pennsylvania Salt Works reminds us of the amateur nature of government during the Revolutionary War. Faced with a legitimate problem—the scarcity of salt—the government of Pennsylvania chose to remedy the problem by entrusting large amounts of money to a man with a dicey prewar history and no experience in salt-making. The oversight of the works was negligible for eighteen months, and then the government's largesse and support for the works evaporated suddenly. While Savadge was clearly irresponsible in managing the salt works, the Pennsylvania government was just as negligent in its oversight role. The New Jersey government, more interested in supporting its own salt-making investments than seeing another state's experiment succeed, acted almost peevishly toward the Pennsylvania Salt Works.

To this day, narratives on government during the American Revolution most often focus on the political philosophy of the Founders and the critical moments that ultimately brought forward independence. However, as demonstrated so ably by E. Wayne Carp, the fledgling national and state governments also had a propensity for entrusting large sums of public money to men who were corrupt, incompetent, or both. Thomas Savadge’s failure as a custodian of public funds was not unique.⁵⁰ The ill-conceived Pennsylvania Salt Works are a good reminder that the Founders—for all of their intellectual gifts—had naïve and amateur moments as administrators of the public’s money.

NOTES

1. There are a few macrohistories of the Revolutionary period that specifically discuss the salt shortage in America during the Revolution. For example, John McCusker and Russell Menard document the dependence of the American colonies on imported salt, suggesting that they imported about 750,000 bushels of salt from Britain in 1770 alone. Among foodstuffs, salt trailed only sugar among imported foods. See *The Economy of British America, 1607–1789* (Chapel Hill: University of North Carolina Press), 185n, 284–86. Richard Buel noted that salt was often excused from the colonial embargo of British goods at the war’s start, noting that colonial leaders regarded it as “strategically comparable to gunpowder.” At another point, Buel suggests that salt, gunpowder and arms were co-equal import needs for the rebelling American colonies in the early years of the Revolution. See Richard Buel, *In Irons: Britain’s Naval Supremacy and the American Revolutionary Economy* (New Haven, CT: Yale University Press, 1988), 35, 96. In addition, a handful of historians have studied the salt shortage at the start of the American Revolution and the American responses to the resulting shortages. Particularly recommended is Larry Bowman, “The Scarcity of Salt in Virginia during the American Revolution,” *Virginia Magazine of History and Biography* 77 (1969): 464–72, and R. L. Hilldrup, “The Salt Supply of North Carolina during the Revolutionary War,” *North Carolina Historical Review* 22 (1945): 393–417. More recently, Anne Ousterhout’s “Controlling the Opposition in Pennsylvania during the American Revolution,” *Pennsylvania Magazine of History and Biography* 105 (1981): 3–34, and Ira Berlin’s “Time, Space, and the Evolution of Afro-American Society on British Mainland North America,” *American Historical Review* 85 (1980): 44–78, have discussed the need for domestic salt manufacture within broader studies. There are a number of more general studies that look at shortages of supplies and the immature structures for dealing with these shortages in the new republic. Particularly recommended is E. Wayne Carp, *To Starve an Army at Pleasure* (Chapel Hill: University of North Carolina Press, 1984).
2. Dorothy and James Volo, *Daily Life during the American Revolution* (Westport, CT: Greenwood, 2003), 180. As early as 1647, the Dutch governor-general of New Amsterdam (New York), Peter Stuyvesant, proposed awarding monopolies on key domestic manufactures: “one to establish an ashery, one to make tiles and bricks, and the third to put up a salt works.” His plan was overruled by

- the colony's directors in the mother country. See Michael Kammen's *Colonial New York* (New York: Oxford University Press, 1996), 57. A century later, in 1754, Samuel Warden established a salt works at Forked River, New Jersey, but there is no reason to believe that the resulting salt works lasted long. See Arthur Pierce, *Smugglers' Woods* (New Brunswick, NJ: Rutgers University Press, 1960), 229, and Harold Wilson, *The Jersey Shore*, 3 vols. (New York: Lewis Publishing, 1953), 1:166. The destruction of the forests of Cheshire in the 1700s is noted by the Salt Manufacturers Association (of the United Kingdom) on their website, <http://www.saltsense.co.uk/history08.php>.
3. *Journals of the Continental Congress, 1774–89*, 34 vols. (Washington, DC: U.S. Government Printing Office, 1904–37), July 31, 1775, and December 29, 1775. Online by date at www.ammem/amlaw/lwdg.html (hereafter JCC).
 4. Robert Treat Paine, *The Art of Making Common Salt* (Philadelphia: R. Aiken, 1776). New Jersey historian William MacMahon notes the suitability of the Jersey shore to eighteenth-century salt-making technique in *South Jersey Towns* (New Brunswick, NJ: Rutgers University Press, 1973), 304. Pierce offers similar observations in *Smuggler's Woods*, 229. See also K. Braddock-Rogers, "Saltworks of New Jersey during the American Revolution," *Journal of Chemical Education* 15, no. 12 (1938): 586–92, for an overview of salt-making as practiced in the Revolutionary War salt works.
 5. C. C. Smith, "Scarcity of Salt during the Revolutionary War," *Proceedings of the Massachusetts Historical Society* 15 (1856): 221–27; JCC, April 17, 1776; Pierce's, *Smugglers' Woods*, 225–26. Additional information on early salt-making experiments is found in Bowman, "Scarcity of Salt in Virginia during the American Revolution"; Barry Neville's "For God, King, and Country: Loyalism on the Eastern Shore of Maryland during the American Revolution," *International Social Science Review* 84 (2009): 3–4; Hilldrup's "Salt Supply of North Carolina during the Revolutionary War"; and William Quinn's *The Salt Works of Historic Cape Cod* (Barnstable, MA: Parnassus: 1993).
 6. The New Jersey Council of Safety's deliberations are recorded in *Minutes of the New Jersey Council of Safety* (Jersey City, NJ: John H. Lyon, 1872). See also Peter Force's *American Archives*, 9 vols. (New York: Johnson Reprint Co., 1972), 6:1947–48; Pierce, *Smuggler's Woods*, 225–26; and the *Pennsylvania Ledger*, June 1, 1776.
 7. JCC, May 30, 1776; the quotation from the Pennsylvania Council of Safety is printed in the *Pennsylvania Ledger*, June 1, 1776. A report on the Long Island salt works appears in *New York Gazette and Weekly Mercury*, May 27, 1776. A good summary of the Dorchester County (Maryland) Salt Riots is in Neville's "For God, King, and Country."

For information on the first salt works in Massachusetts, see Smith's "Scarcity of Salt during the Revolutionary War." Hilldrup discusses the early salt works at Beaufort, North Carolina in "Salt Supply of North Carolina," 385.
 8. Documentation on the June 10, 1776, meeting of the Pennsylvania Committee of Safety is in *The Pennsylvania Archives: Colonial Records, First Series*, 16 vols. (Harrisburg: Samuel Hazard, 1837–53), 4:771. Information on Savadge's prewar activities is scattered and incomplete, but see the *Pennsylvania Gazette*, September 8, 1786, and January 10, 1771. Information on the grandiose plan for the Pennsylvania Salt Works is in Wilson, *The Jersey Shore*, 1:171–72. Also see the Philadelphia tax lists, reprinted in the *Pennsylvania Archives: Transcript of the Provincial Tax, County of Philadelphia* (Philadelphia: John Stevens, 1859), 396. See also William McMahon, *South Jersey Towns* (New Brunswick, NJ: Rutgers University Press, 1973), 304.

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9. For extensive information on the financial obligations of the Pennsylvania Salt Works, see Account Books of the Pennsylvania Salt Works, MS Collection 994, History Society of Pennsylvania. The antiquarian historian William Fischer noted the presence of the Pennsylvania Salt Works along the north bank of the Toms River in his article, “The Toms River Block House Fight,” *Proceedings of the New Jersey Historical Society* 14, n.s. (1929): 419–20. Benjamin White’s comments are in his autobiography, printed in Judith Olson, *Lippincott: Five Generations of Descendants of Richard and Abigail* (Woodbury, NJ: Gloucester Historical Society, 1982), 159–61. Currency inflation and disaffection for Continental money was so great that some salt works paid their laborers in salt by war’s end. See Harry Weiss, *The Revolutionary War Salt Works of the New Jersey Coast* (Trenton: Past and Present, 1959), 45–48.
10. Robert Morris’s letter is printed in the *Pennsylvania Ledger* on August 31, 1776. Also see Hezekiah Niles, *Principles and Acts of the Revolution in America* (New York: A. S. Barnes and Co., 1876), 431.
11. For information on Bard’s salt works, see Smith, “Scarcity of Salt during the Revolutionary War,” 224. The funding for Bard’s salt works was delayed for a few weeks. It was finally released on September 11, 1776. See manuscript box 11, item 23, Manuscript Collection, New Jersey State Archives Bureau of Archives and History, and *The New Jersey Votes of the Assembly*, September 11, 1776, 8, at the Library Company, Philadelphia. Bard became a Loyalist and never repaid the loan, prompting the New Jersey Legislature to instruct the attorney general to attempt to recover the money in June 1783. (See *New Jersey Votes of the Assembly*, June 4, 1783, 117.) For information on the Parker-Corlies-Lippincott salt-works, see *The Journals of the Legislative Council of the State of New Jersey*, October 3, 1776 (Isaac Collins, State of New Jersey: 1776), 29–30; see also, *New Jersey Votes of the Assembly*, September 20, 1776, 17; September 27, 1776, 23; *Acts of the General Assembly of New Jersey*, 6–7, 47, at the Library Company, Philadelphia. Other salt-works owners who experienced labor problems included David Forman, who complained of sickly laborers at his salt works. His letter is in the Emmitt Collection, New York Public Library, reel 7:7830. Thomas Hopkins’s journal includes numerous complaints about labor problems. It is printed in “Journal of Thomas Hopkins of the Friendship Salt Company, New Jersey 1780,” *Pennsylvania Magazine of History and Biography* 42 (1918): 46–61. The travails of both Forman and Hopkins are discussed later in this paper. On November 22, 1776, the New Jersey General Assembly read a petition from Samuel Bard regarding subsidizing a proposed salt works at Manasquan, but there is no evidence that the legislature acted on this or any other later requests to publicly underwrite salt works. See *New Jersey Votes of the Assembly*, November 22, 1776, 42. *Proceedings of the Assembly of the Lower Counties on the Delaware*, 1776, and *the House of Assembly of the Delaware State, 1776–1781* (Cranbury, NJ: Associated University Press, 1986) 265, 299.
12. The exemption requests from the State of Pennsylvania and the New Jersey Assembly’s reply are in the John Hart Papers, John Turner Collection, Library of Congress; *New Jersey Votes of the Assembly*, September 2, 1776, 3.
13. Savadge’s October letters are in the *Pennsylvania Archives*, 1st ser. (Philadelphia: Joseph Stevens, 1853), 5:55, and also discussed in Pierce’s *Smugglers’ Woods*, 235.
14. For information on the requests of the Council of Safety, the letter from the Continental Congress and action of Governor Livingston, see Edwin Salter’s *History of Monmouth and Ocean Counties* (Bayonne: E. Gardner and Sons, 1890), 419, entries; Peter Force, *The American Archives*, 4th ser.,

- 3:182–83; Carl Prince et al., eds., *The Papers of William Livingston*, 5 vols. (Trenton: New Jersey Historical Society, 1979), 173, 182–84; and JCC, November 5, 1776.
15. For information on the decision to send Captain Rice's galley to Toms River, see Robert Morris to Benjamin Rush, February 17, 1777, *Letters to the Delegates of Congress*, website for Papers of Continental Congress, memory.loc.gov > American Memory > Lawmaking Home http://memory.loc.gov/cgi-bin/query/D?hlaw:1::/temp/~ammem_kGm3:: (hereafter Letters Delegates); also November 19, 1776, William Livingston Papers, at the New Jersey State Archives, Trenton.
16. The most complete account of central New Jersey's Loyalist insurrection of December 1776 is in the author's *The American Revolution in Monmouth County* (Charleston, SC: The History Press, 2010). Good overviews of New Jersey during this time period are offered by Mark Lender, "The Cockpit Reconsidered," in *New Jersey in the American Revolution*, ed. Barbara Mitnick (New Brunswick, NJ: Rutgers University Press, 2005), and David Hackett Fischer, *Washington's Crossing* (New York: Oxford University Press, 2004).
17. Savadge's account of the seizure of the Pennsylvania Salt Works is in the *Pennsylvania Archives*, 4:194–95. The sparing of the salt works is also discussed in Fischer's "The Toms River Block House Fight," 420, and McMahon, *South Jersey Towns*, 304. See also William Stryker's *The New Jersey Volunteers in the American Revolution* (Trenton: Naar, Day and Naar, 1887) 53; and Lorenzo Sabine, *Loyalists of the American Revolution*, 2 vols. (Westport, CT: Meckler, 1984), 2:596.
18. *Pennsylvania Archives*, 4:194–95.
19. Savadge's reports on the Loyalist incursions are in the *Pennsylvania Archives*, 5:216. The resolve of the Council of Safety is in the *Minutes of the Pennsylvania Council of Safety*, 2:114, 126, 191. Morris's counterproposal is in Letters Delegates, February 17, 1777. Arthur Pierce also narrates this difficult time at the Pennsylvania Salt Works in *Smuggler's Woods*, 236–37. See also *Pennsylvania Archives*, *Colonial Records of Pennsylvania: Minutes of the Supreme Executive, First Series* (Harrisburg: Theo Fenn and Co., 1853), 11:126, 191.
20. Savadge's observations about the local militia are in the *Pennsylvania Archives*, 5:216, 228. Colonel David Forman was concurrently a colonel in the Continental Army charged with command of an "Additional Regiment" raised for the defense of Monmouth County and a brigadier general of the New Jersey Militia, commanding the militia of three central New Jersey counties. Forman was also a co-owner of salt works at Manasquan and near Forked River. In 1777 he claimed martial law powers and exercised broad discretion in making military and civil government decisions, at least until the New Jersey Assembly intervened toward the end of the year. Given Forman's long history of intermingling personal and public agendas, it is certainly possible that he may have been happy to see the rival Pennsylvania Salt Works left unprotected. The fullest discussion of Forman's controversial career is in Adelberg's *The American Revolution in Monmouth County*.
21. Adelberg, *American Revolution in Monmouth County*.
22. The Acts of the New Jersey Legislature are in *Journals of the Legislative Council of Jersey* (Trenton, NJ: Isaac Collins: 1777), 69, 73. Also see the John Turner Papers within the John Hart Collection, Library of Congress; *Acts of the General Assembly of New Jersey*, 1777, 6–7, 47; Francis Lee, *New Jersey as a Colony and State*, 4 vols. (New York: Publishing Society of New Jersey, 1902), 2:73. Mott's letters are in Box 1, nos. 55 and 58, Manuscript Collection, Bureau of Archives and History, New Jersey State Archives, Bureau of Archives and History, Trenton, and Prince et al., eds., *Papers of William Livingston*, 1:303.

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23. Biddle's letter to the Continental Congress is in the Papers of the Continental Congress, microfilm reel 83, item 69, 1:355. The debate is found in Paul Smith et al., eds., *Letters of Delegates to Congress*, 14 vols. (Washington, DC: Library of Congress, 1976–2000), 6:554. The Pennsylvania Council of Safety's request to Governor Livingston and the governor's response are in Salter's *History of Monmouth and Ocean Counties*, 92, 193–94; Prince et al., eds., *Papers of William Livingston*, 1:303.
24. Savadge's letter is in the *Pennsylvania Archives* 5:418–19. Nice's letter is in the *Pennsylvania Archives*, 5:427–28. Forman's letter is on reel 7, p. 7830, in the Emmitt Collection, New York Public Library.
25. Savadge's letter to the Board of War is in the *Pennsylvania Archives*, 5:540.
26. Wade's complaint is in series 4, reel 39, January 29, 1777, George Washington Papers, Library of Congress. Forman's quote are in reel 13, item 13, 162 and reel 49, item 41, 188, *Papers of the Continental Congress*, National Archives. Information on New Jersey's salt price-fixing is in Rogers, "Saltworks of New Jersey during the American Revolution," 591; Wilson, *The Jersey Shore*, 1:171; and Weiss, *The Revolutionary War Salt Works of the New Jersey Coast*, 44–45. Washington's letter is in Box 1, Neilson Family Papers, Rutgers University Special Collections, New Brunswick.
27. John Adams's letter is in Smith, "Scarcity of Salt during the American Revolution," 226. Livingston's proposal to the New Jersey Assembly is in Prince et al., eds., *Papers of William Livingston*, 2:52. Forman's memorial is in the *Journals of the Continental Congress*, September 11, 1777; Mott's bills are in *New Jersey Votes of the Assembly*, September 24, 1777, 190–93.
28. Livingston's letter to Wharton is in Prince et al., eds., *Papers of William Livingston*, 2:69–70. The act granting militia exemptions to the Pennsylvania Salt Works is printed in *Pennsylvania Archives*, 5:745. The New Jersey law passed on December 11 granted one militia exemption per 500 gallons of "boiling vessels" at each salt work. The law had a one-year duration. See Prince et al., eds., *Papers of William Livingston*, 2:126, and Weiss's *Revolutionary Salt Works of New Jersey*, 39.
29. Savadge's letter is in the *Pennsylvania Archives*, 5:763–64.
30. Crispin and Wharton's correspondence is in William Morgan, ed., *Naval Documents of the American Revolution*, 11 vols. (Washington, DC: U.S. Government Printing Office, 1963–) 10:306, 419. The letter to Col. John Cox is excerpted in Pierce's *Smuggler's Woods*, 237. The New Jersey Legislature denied petitions for militia exemptions at particular salt works from Nathaniel Scudder, a friend of the governor and eventual member of the Continental Congress, and David Knott. Instead, the Legislature granted militia exemptions at all salt works. See *New Jersey Votes of the Assembly*, November 13, 1777, 117, and November 28, 1777, 33–34.
31. Savadge's letter is in the *Pennsylvania Archives*, 5:763–64.
32. Wharton's letters to Davison and Savadge are in the *Pennsylvania Archives*, 6:16–18.
33. Hazelwood's orders, Savadge's letter to the Council of Safety, and the Council's orders to Davison are in the *Pennsylvania Archives*, 6:181–82, 236.
34. Savadge's letter is in the *Pennsylvania Archives*, 6:236.
35. There are several accounts of the April 1 raid against Manasquan and Shark River. See *New Jersey Gazette*, April 5, 1778, *New York Royal Gazette*, April 8, 1778, *New York Gazette and Weekly Mercury*, April 13, 1778, and *Pennsylvania Ledger*, April 25, 1778. The commander of the expedition, Captain Boyd Potterfield, reported on the raid to General Henry Clinton. See the Henry Clinton Papers at the Clements Library, University of Michigan, vol. 33, item 15. Savadge's letters to the Council are in the *Pennsylvania Archives*, 6:398, 400.

36. The Council's letter to Savadge is in the *Pennsylvania Archives*, 6:417.
37. Savadges letters to the Council are in the *Pennsylvania Archives*, 7:96–116.
38. See the Pennsylvania Salt Works Account Books at the Historical Society of Pennsylvania. Mott's and Saltar's advertisements appeared in *New Jersey Gazette* on January 6, 1779, and February 10, 1779, as well as subsequent editions. Mott also sold an additional thousand acres in August (see *New Jersey Gazette*, August 25, 1779).
39. See Pierce's *Smuggler's Woods*, 237. The resolve of the Council of Safety to sell the Pennsylvania Salt Works is in *Pennsylvania Archives: Colonial Records of Pennsylvania, Minutes of the Supreme Executive*, 12:160 and *Pennsylvania Archives*, 2nd ser., 1:76, 101, 108. For information on John Thompson's purchase of the Pennsylvania Salt Works and his eventual success at the works, see Pierce, *Smuggler's Woods*, 238. The destruction of the Pennsylvania Salt Works is also noted in Weiss's *Revolutionary Salt Works of New Jersey*, 44.
40. The letters between Little and Cooper are in Weiss's *Revolutionary Salt Works of New Jersey*, 28–37. There are several good accounts of the British incursion against Little Egg Harbor and Chestnut Neck, including Franklin Kemp's *Nest of Rebel Pirates* (Egg Harbor, NJ: Batsto Citizens Committee, 1966), which excerpts Capt. Henry Collins's account of burning three salt works on 34–35. See also the *New Jersey Gazette*, October 14, 1778. In a letter dated October 11, Governor Livingston expressed his worry about the safety of the New Jersey salt works to Lord Stirling: "they have given out instructions to destroy all the salt works on the shore" and already destroyed two works in Little Egg Harbor, those on Osborn's Island and at the Faulkner's Island bridge. The defining work on the Pine Robbers of the Jersey shore is David J. Fowler, "Egregious Villains, Wood Rangers, and London Traders: The Pine Robber Phenomenon in New Jersey during the Revolutionary War," PhD diss., Rutgers University, 1987.
41. Thomas Hopkins's journal is printed in "Journal of Thomas Hopkins of the Friendship Salt Company, New Jersey 1780," *Pennsylvania Magazine of History and Biography* 42 (1918): 46–61.
42. The information in the table is pulled from many sources, particularly Pierce's *Smuggler's Woods*; Braddock's "Salt Works of New Jersey during the American Revolution," 586–87, 591; Richard Koke's "War, Profits, and Privateers along the Jersey Shore," *New-York Historical Society Quarterly* 41 (1957): 281; and Jeffrey Dorwart's *Cape May County, New Jersey: The Making of an American Resort* (New Brunswick, NJ: Rutgers University Press, 1997), 55; Weiss's *The Revolutionary Salt Works of New Jersey*, 27; *The New Jersey Archives, Extracts from Revolutionary War Newspapers* (Bayonne: State of New Jersey, 1880), 1:485.
43. The sordid story of David Forman and his salt-works scandals is told in pieces of several works, including Pierce's *Smuggler's Woods*, Leonard Lundin's *Cockpit of the Revolution* (Princeton, NJ: Princeton University Press, 1940), the author's own *The American Revolution in Monmouth County*, and various antiquarian works. For a good summary of Forman's Additional Regiment, see Fred Berg, *The Encyclopedia of the Continental Army* (Harrisburg, PA: Stackpole Books, 1968). Washington's decision to take Forman's troops away from his salt works is in John C. Fitzpatrick, ed., *The Writings of George Washington*, 31 vols. (Washington DC: U.S. Government Printing Office, 1931–44), 11:148–49. Information on the sale of salt works is contained in the *Pennsylvania Evening Post*, March 19, 1779. See also Weiss's *The Revolutionary Salt Works of New Jersey*, 18, 20.

44. Information on the Neilson–Van Embugh salt works at Toms River is in Weiss’s *Revolutionary Salt Works of New Jersey*, 26–28 and Pierce’s *Smuggler’s Woods*, 238 and 250. Information on Joseph Ball and General Greene is in Pierce’s *Smuggler’s Woods*, 58–61 and 71–73.
45. See McCusker and Menard, *The Economy of British America*, 261. The *New Jersey Gazette* notes four sales of imported salt in the second half of 1778, none in the first half. The historians who suggest falling salt prices in 1778 are Arthur Pierce (*Smugglers’ Woods*, 251) and James Levitt, *New Jersey’s Revolutionary Economy* (Trenton: New Jersey Historical Commission, 1975), 19–20.
46. Cooper’s letter is in Weiss’s *The Revolutionary Salt Works of New Jersey*, 30–37. Information on salt prices in Toms River vs. Morristown are in Richard McCormick, *New Jersey from Colony to State* (Princeton, NJ: Van Nostrand, 1964), 152. Montgomery’s advertisement is in the *New Jersey Gazette*, October 21, 1778. Thomas Johnson of Baltimore noted in January 1778 that salt sold for one-third less at Egg Harbor, NJ, than in Baltimore. See Papers of the Continental Congress, M247, 1270, Maryland State Papers, 241, National Archives.
47. Documentation of the Assembly’s vote is in *New Jersey Votes of the Assembly*, October 8, 1778, 203–4. Also see the Legislative Council’s vote on November 6, 1778, *Journals of the Legislative Council of New Jersey*, 10.
48. Different New Jersey historians have noted the impact of the American Revolution on bringing people and investment to the shore in large numbers for the first time. See especially Wilson’s *The Jersey Shore*, 1:201. Cox’s letter to Greene is in *The Papers of General Nathanael Greene*, 13 vols. (Chapel Hill: University of North Carolina Press, 1976–2005), 5:27. The same sentiments were expressed to Greene in a letter from William Stevens, “salt is the only thing . . . the farmers are distressed for salt.” *Ibid.*, 5:163. Information on the New Jersey proprietors and their many interactions with salt works investors and managers is in Pierce’s *Smugglers’ Woods*, 230; the New York Historical Society, online at <http://dlib.nyu.edu/maassimages/amrev/jpg;noo1136s.jpg>; the *New Jersey Gazette*, August 5, 1778; and *Minutes of the Board of Proprietors of the Eastern Division of New Jersey from 1764–1794* (Newark: New Jersey Historical Society, 1895), 250–54. Two venerable New Jersey investor/merchants, William Hartshorne and James Bowne, bankrolled a salt works at Egg Harbor “on a very extensive plan” in 1787. They believed it would be profitable as “proved by facts & experiments.” See James Bowne to William Hartshorne, March 28, 1787, Box 2, Folder 19, Hartshorne Family Papers, Monmouth County Historical Association, Freehold, New Jersey.
49. Major Patrick Ferguson, who led two raids into New Jersey during the war, proposed a campaign against the state in November 1779; prominent in the plan was “destroying the small craft and salt works” between Manasquan and Barnegat. Ferguson’s plan is in Box 75, November 15, 1779, Henry Clinton Papers, Clements Library, Ann Arbor, Michigan. The letter from the anonymous Monmouth County loyalist is in Pierce’s *Smugglers’ Woods*, 228–29. The vulnerability of the salt works was not lost on local militia. Aaron Bennett wrote: “Numerous salt works were erected all along the shore and one of the great objects of the enemy was to destroy them.” Garrett Irons recorded spending several tours in 1779 “as a guard along the shore & at the Pennsylvania Salt Works, which were situated five miles from Toms River—whilst at the salt works, we had a skirmish with a British armed boat with about thirty men”; Benjamin Van Cleave recalled, “once had quite an engagement at Squan, when the British and Tories attempted to burn the Union Salt Works”; William Newberry recalled a skirmish with Loyalists attempting to destroy the salt

works on Absecon Island; Bartholomew Applegate recalled serving several tours “as a guard at the Pennsylvania Salt Works . . . stationed there to protect the works”; and Henry Vail recalled: “had a skirmish with the enemy at Shark River Inlet, they landed from a frigate to destroy the salt works, but was repulsed and drove off.” All of these statements are in the Revolutionary War Veterans Pension Applications at the National Archives, Washington, DC, under the author’s names. Figures on the scope and severity of civil warfare in Monmouth County during the American Revolution are detailed in the author’s “An Evenly Balanced County: The Scope and Severity of Civil Warfare in Revolutionary Monmouth County New Jersey,” *Journal of Military History* 73 (2009): 9–48.

50. E. Wayne Carp’s *To Starve an Army Pleasure* examines the tremendous difficulties experienced by the national and state governments in supplying the Continental Army through the war. Particularly recommend is the chapter “Problems of Supply” that documents the large amount of corruption and incompetence surrounding the supplying the Army with food for the men and forage its animals.