



# THE TOXIC SHIP

*The Voyage of the Khian Sea  
and the Global Waste Trade*

**SIMONE M. MÜLLER**

Foreword by **PAUL S. SUTTER**

## THE TOXIC SHIP

Simone M. Müller

# THE TOXIC SHIP

The Voyage  
of the *Khian Sea*  
and the Global  
Waste Trade

UNIVERSITY OF WASHINGTON PRESS | SEATTLE

*The Toxic Ship* is published with the assistance of a grant from the Weyerhaeuser Environmental Books Endowment, established by the Weyerhaeuser Company Foundation, members of the Weyerhaeuser family, and Janet and Jack Creighton.

Copyright © 2023 by the University of Washington Press  
Design by Mindy Basinger Hill  
Composed in Minion Pro

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage or retrieval system, without permission in writing from the publisher.

UNIVERSITY OF WASHINGTON PRESS *uwapress.uw.edu*

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

*Names:* Müller, Simone M., author.

*Title:* The toxic ship : the voyage of the *Khian Sea* and the global waste trade / Simone M. Müller.

*Description:* Seattle : University of Washington Press, [2023] | Series: Weyerhaeuser environmental books | Includes bibliographical references and index.

*Identifiers:* LCCN 2023012306 | ISBN 9780295751818 (hardcover) | ISBN 9780295751832 (paperback) | ISBN 9780295751825 (ebook)

*Subjects:* LCSH: *Khian Sea* (Ship) | Refuse and refuse disposal—United States. | Refuse and refuse disposal—Location. | Waste disposal in the ocean.

*Classification:* LCC HD4483.M85 2023 | DDC 363.72/850973—dc23/eng/20230327  
LC record available at <https://lcn.loc.gov/2023012306>

∞ This paper meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

## ONE

### “A Classic Situation” | *Philadelphia and the Making of an Urban Waste Crisis*

It stinks. . . . It is making the neighborhood smell and the neighborhood looks horrible.

JO ANN MAURER | quoted in Philip Lentz, “Strike, Heat Leave Philadelphia in a Stink,” *Chicago Tribune*, July 9, 1986

It was in the streets of Philadelphia in the summer of 1986 that journalists first picked up the scent of a story that would lead them and others to the *Khian Sea*. An all-pervasive smell of putrefying garbage, intensified by the July heat, marked the presence of rotten waste structures underneath an economically struggling and socially tense city.<sup>1</sup> That July, Philadelphia’s streets were contested territory. The city’s sanitation workers were striking for more pay and better working conditions. They stopped collecting trash, clearing the city’s incinerators of accumulated ash, and hauling the refuse to landfills in the neighboring counties. Three weeks into the strike, almost sixteen thousand tons of municipal solid waste had accumulated at twenty hurriedly opened emergency dumps, or often simply in front of vacant buildings, where people would drive up and throw their trash out of their cars.<sup>2</sup>

To avoid the sight and smell of the mounting trash, people kept windows and doors tightly shut and blinds down.<sup>3</sup> Mayor Wilson Goode urged Philadelphians to keep their trash at home. Residents were out on the street with brooms and shovels, clearing the waste mounds, while others stood watch to discourage illegal dumpers. Violence was in the air. Goode threatened to bring in private waste haulers as strikebreakers, and Philadelphians revolted at the unequal distribution of waste throughout the city. They all agreed the waste needed to go, without a thought on *where*.<sup>4</sup>



A ten-year-old girl covers her mouth and nose while walking through a temporary neighborhood dump site in Philadelphia on July 15, 1986, during the third week of the strike by municipal garbage workers. © Picture Alliance/Associated Press/Charles Krupa.

To ship Philadelphia waste out of town, and eventually down South, was neither a spontaneous decision nor unprecedented. It resulted from pressures that had shaped the city's waste-handling practices for centuries. Initially, Philadelphia's city council claimed the cause of the waste problem was overly strong workers' unions. Before long, however, the roles of mass consumption, dramatically rising waste levels, new environmental laws, and limited disposal facilities could not be denied.<sup>5</sup> Additionally, more and more citizens had become proponents of environmental protection and were keeping close watch on the city's environmental activities. By the time of the strike, Philadelphia's problem with waste had mushroomed out of proportion. Yet, in comparison with other US cities, it was a "classic situation." A major city had evolved over the centuries "without ever resolving the question of waste disposal."<sup>6</sup>

## Philadelphia's Waste-Handling Practices

Philadelphia is one of the oldest European settlements on the North American continent, with even older Indigenous history.<sup>7</sup> Established in 1682 by William Penn at the meeting of the Schuylkill and Delaware Rivers, Philadelphia soon became the fastest-growing and largest city in colonial America. By 1760, its population approached 17,000 people—comprising both voluntary and involuntary arrivals. Between 1840 and 1860, Philadelphia's population mushroomed to 565,529, then grew to one million in 1890 and two million in 1950.<sup>8</sup> Key to Philadelphia's rise was its location as a major Atlantic port and a gateway to Pennsylvania's farmland, the Appalachian Mountains, and the Ohio River Valley. These avenues allowed people to transport resources into the city and to distribute products nationally and internationally from it. Long before Chicago, Philadelphia existed as a metropolis shaped by a hinterland of abundance. In the mid-nineteenth century, the city also became the center of the United States' most highly industrialized region.<sup>9</sup> World War I boosted industrial development. Ships, artillery shells, railroad gun mounts, steel helmets, and military boots were all made in Philadelphia. By 1920, there were 465,000 manufacturing workers in Philadelphia's larger firms.<sup>10</sup> Unlike other American cities where industrial development centered on one particular industry, such as steel in Pittsburgh or textiles in Lowell, Massachusetts, the greater Philadelphia area was home to a range of different industries. There were the glass manufacturers in South Jersey, the iron forges of Hopewell in the west, and the anthracite coalfields north of the city. The chemical and chemical processing industries, among them Rohm & Haas, Dow, and DuPont, formed another important part of the industry of the Delaware Valley region.<sup>11</sup> A mix of small and midsized industries, with a few large-scale producers, shaped the city's waste-handling practices.

Throughout its existence, but particularly after World War II, Philadelphia battled with mushrooming amounts and changing compositions of waste. By 1960, the average American produced an estimated one kilogram of municipal solid waste per day. By 1986, this quantity had almost doubled.<sup>12</sup> Immediately after World War II, Philadelphia's sanitation workers lifted as much as seven tons of municipal solid waste into horse-driven carts on a typical workday—an annual total of 2,555 tons.<sup>13</sup> This figure skyrocketed to 1.36 million tons annually in 1974, or roughly 3,725 tons of trash daily.<sup>14</sup> By the time of the 1986 sanitation workers' strike, the city's trash fleet consisted of 250 waste trucks that collected about 1.6 million tons of municipal solid waste annually.<sup>15</sup>

Until the early twentieth century, paper and food waste formed the major components of Philadelphia's discards. With new synthetic products and rampant consumerism after World War II, this composition changed fundamentally.<sup>16</sup> A massively growing packaging industry created innumerable goods with short useful lives. Many of the trash bags piling up at the emergency dumps during Philadelphia's waste strike contained nonreturnable bottles and cans and plastic packaging from self-service merchandising at the supermarket. By 1986, a range of different heavy metals, plastics in addition to other synthetic materials were common elements in the municipal waste stream, demanding new disposal practices for materials that were nonbiodegradable or could leach toxic compounds.<sup>17</sup>

Philadelphia relied on a combination of waste-disposal facilities and services, ranging from open water-dumping to incineration, without ever having developed a coordinated disposal plan. The Delaware and the Schuylkill Rivers served as major dumping grounds for the city's municipal sewage and industrial runoff.<sup>18</sup> Starting in 1961, Philadelphia also dumped waste into the Atlantic Ocean at a site east of Cape Henlopen, where the ocean currents and the water depth were favorable and the shell fishing was of marginal value. By 1973, Philadelphia had to move its dumping to a larger location southeast of Delaware Bay. The first site had been 5 square kilometers in area; this second site was 130.<sup>19</sup> Between 1961 and 1977, Philadelphia used barges to transport approximately 960 million gallons of sewage sludge to the ocean, most of it contaminated with heavy metals.<sup>20</sup>

On land, Philadelphia relied on open dumps—open pits with no spillage- or leakage-control mechanisms. The open dumps sprung up “wherever city officials could find a willing landlord.” Because the sites were usually small, waste disposal required a constant search for new sites.<sup>21</sup> Some large open dumps existed on Fourth Street and Oregon Avenue in South Philadelphia. In its 1924 and 1929 maps, Philadelphia's Bureau of Street Cleaning marked twenty-three city-owned dumps scattered over its twelve waste districts. After 1945, as more people flocked to the city, Philadelphians increasingly considered open dumps a nuisance, observing the stench of vermin, fires from burning garbage, and explosions from the buildup of methane gas.

The model of the sanitary landfill, where refuse was covered with soil to eliminate the putrefaction of organic material and with it the problems of noxious smoke, rats, and mosquitoes, offered an alternative. By 1969, Philadelphia's Bureau of Street Cleaning had consolidated the city's open dumps into three landfills: the sixty-three-acre Penrose Landfill, located in Southwest Philadelphia, the forty-four-acre Swanson Street Landfill in South Philadelphia, and the



fifty-one-acre House of Correction landfill located in Northeast Philadelphia on the Delaware River waterfront.<sup>22</sup> Sanitary landfills also caught on in the greater Philadelphia region, and communities started offering their services to the city. In 1951, two sanitary landfills started operating in Montgomery and Bucks Counties in Pennsylvania. Camden started landfilling at a site in the Cramer Hill neighborhood in 1952. In Delaware, twenty-six landfills had opened by 1978. By the end of the 1970s, Philadelphia had closed all its inner-city landfills and was relying on landfills in other counties. Until its closure in November 1985, the city's primary out-of-city landfill was Kinsley Landfill, New Jersey. Kinsley was just across the Delaware River from Philadelphia and about a fifteen-minute drive from Center City. By 1984, it was receiving 1,250 tons of Philadelphia waste daily.<sup>23</sup>

As in other larger cities, burning was the final element in Philadelphia's waste-disposal approach. Reduction was a process similar to incineration; it involved burning garbage but aimed to separate materials in order to extract nutrients from food waste. In the 1970s, Philadelphia was unusual among big American cities in that it still separated its food waste for sale to pig farmers, selling as much as eighty-five thousand tons.<sup>24</sup> The remaining garbage was taken to a reduction plant, where saleable grease and components for fertilizer from food waste were extracted. The unsaleable waste was then incinerated, and everything that could not be burned was dumped.

One of the disadvantages of reduction was that it was expensive. Another was the horrendous odor it produced, which triggered complaints from those living nearby. Philadelphia had two operational reduction plants, the Harrowgate Incinerator in Kensington, and the City Reduction Plant in South Philadelphia, near the Delaware. Both plants were expensive to operate. Despite the revenues from the sale of grease and fertilizer components, it cost more than \$100,000 a year to operate the plants.<sup>25</sup>

Incineration—the practice of reducing the volume and weight of waste through burning—was Philadelphia's most controversial disposal method. In the United States, the first generation of incinerators appeared in cities between 1885 and 1908. These proved too smoky and costly to be practical. In the 1920s and 1930s, communities lacking space for sanitary landfills—among them Philadelphia—returned to incineration. By World War II, some seven hundred incinerators were in operation throughout the United States.<sup>26</sup> During the 1950s and 1960s, Philadelphia shifted its inner-city waste management strategy to center on incineration, with the intention of replacing reduction and landfilling. Although incineration was much more expensive than ocean dumping or landfilling,

Philadelphia built four new incinerators between 1953 and 1956. Almost from the start, Philadelphia's four incinerators were working overtime, processing unprecedented quantities of waste. By 1965, two more incinerators were built, with the residual ash being transported to landfills in New Jersey.<sup>27</sup>

Until 1919, when a new city charter was adopted, Philadelphia had contracted out all its waste disposal to private companies. Installed to combat corruption in the waste disposal system, the new charter granted Philadelphia the authority to operate its own street cleaning, waste collection, and disposal services. Garbage disposal moved—on paper—from the hands of private haulers into those of city employees, and a Street Cleaning Bureau was added to the Department of Public Works. It employed between two thousand and three thousand men, primarily African Americans, to collect and dispose of trash. They worked six days a week, providing weekly service for most neighborhoods.<sup>28</sup> Yet despite the new charter, the old contracting system with private waste haulers remained intact. Over the decades, Philadelphia's city council returned to a reliance on private actors, partly motivated by what the council saw as an overly strong sanitation workers' union.<sup>29</sup> In the 1980s, this shared arrangement between city and private services enabled private waste contractors to tempt the city with offers to take Philadelphia's massive amounts of waste beyond city and national borders.

Philadelphia was no pioneer of the sanitary city.<sup>30</sup> Rather, its waste-disposal practices were typical of many large US cities in the second half of the twentieth century. It relied on a mix of disposal facilities, including open-water dumping, landfilling, and incineration, incorporating both public and private services while lacking a plan for coordinating the activities of the different facilities and services. Additionally, the city faced the challenge of dealing with increasing amounts and changing compositions of waste, which in the 1980s included the toxic remnants of US mass consumption, such as plastics, packaging, cans, and other consumer items. Remarkably, much of Philadelphia's waste was disposed of *beyond* city limits from the onset, and the decision to close all inner-city landfills by the end of the 1970s spurred that development: Philadelphia trash was dumped into the Delaware, the Schuylkill, or the Atlantic, or was landfilled in other counties in Pennsylvania and New Jersey. Externalization of waste did not begin with shipping the material to the greater Caribbean on board the *Khian Sea*.

## OUTSIDE INTERFERENCE TO SAVE A DYING RIVER

We tend not to think of Philadelphia as a riparian city. Yet its two tidal rivers, the Lenapewihittuk—renamed the Delaware by European settlers—and the Tool-pay Hanna, or Tool-pay Hok Ing—renamed the Schuylkill—have shaped its environment and history. Long prior to European settlement, there was human activity along both rivers. Paleo-Indians were using the rivers as food sources as early as 8000 BCE. Their successors, the Leni-Lenape, followed shad upriver and lived in villages on both sides of the Delaware.<sup>31</sup>

Indigenous peoples had used the waters of the Schuylkill and the Delaware for millennia, but it took the European settlers just a century to poison their own water supplies. The city's wells filled with all manner of detritus, and the small creeks that fed the Delaware served as open sewers. The river became unusable.<sup>32</sup> To solve the problem, the city built the United States' first municipal water system in 1801. Water was pumped from the Schuylkill along a viaduct to Center Square, at Broad and Market Streets, from where a network of pipes redistributed the water to households, breweries, sugar refineries, and fire hydrants. Yet as the city grew toward the Schuylkill and hosted more and more industries, water pollution increased. Not only municipal sewage but all sorts of industrial liquid waste ended up in both rivers. By the mid-twentieth century, the Delaware ran black from coal, oil, tanning byproducts, and waste from other unidentifiable sources. When the Delaware Valley stood as one of the greatest industrial concentrations of industry in the world, "the river had become its sewer."<sup>33</sup>

Those working on or along the Delaware were the first to feel the impact of a dying river. Grease in the water clogged ships' cooling systems. Gases emerging from the water discolored paint on buildings and ships, corroded metal parts in ship engines, and sickened dockworkers. Above all, the river stank. By the 1950s, ground controllers told pilots coming into Philadelphia that the smell they were detecting at five thousand feet was the Delaware. As the fish in the river died, so did commercial fisheries.<sup>34</sup> In 1962, scientists from the marine laboratories at the University of Delaware found that water quality in the Delaware River had undergone rapid changes, possibly irrevocably altering the aquatic environment. Industrial and city pollution, deforestation, and poor land management had resulted in a higher load of silt and dissolved nutrients, resulting in a higher temperature of runoff water, with a reduced capacity to carry dissolved oxygen.<sup>35</sup>

Lacking funds, Philadelphia could do little on its own to save the Delaware. Instead, the State of Pennsylvania and the national government stepped in.

In 1905, Pennsylvania enacted the Purity of Waters Act to limit sewage disposal, followed by the Clean Streams Law of 1937, which expanded penalties on polluters and tightened discharge limits. In 1939, the states of New York, New Jersey, Pennsylvania, and Delaware formed the Interstate Commission on the Delaware River Basin, which over the years sponsored a series of conservation programs.<sup>36</sup> After World War II, the federal government entered the stage. In 1948, US Congress passed the Water Pollution Control Act, which put the federal government in a strong advisory and assistant role, provoking a significant debate over whether the federal government had the constitutional authority to impose air- and water-pollution control mandates. Among other measures, the 1948 act supported local authorities by offering large-scale federal subsidies for building sewage-treatment plants. A 1961 statute expanded federal funding for cities and suburbs.<sup>37</sup> More than three hundred municipal and industrial waste-treatment plants were constructed along the Delaware during the 1950s and 1960s.<sup>38</sup> Between 1950 and 1966, Philadelphia brought three sewage-treatment plants into operation to dispose of waste from the city and roughly two thousand local industries.<sup>39</sup>

While state and federal measures helped the Delaware, Philadelphia lost some of its autonomy to these new governance structures, and both the state and the national campaigns to combat a dying Delaware foreshadowed the increasing pressure that the city would feel to conform to standards imposed from outside. Long before the *Khian Sea* sailed down the Delaware River, it was the river that set the story in motion.

## Philadelphia, the Struggling City

In the summer of 1986, Philadelphia's streets not only revealed the story of its long-festering waste crisis; they also exposed its social and economic strains. The decades following World War II had brought profound challenges that the city, once the workshop of the world, had managed poorly. The 1970s and 1980s had brought the global oil crisis, Reaganomics, Watergate, peace accords that ended the Vietnam War, a conservative backlash against the civil rights movement of the 1960s, and the rebirth of the human rights discourse.<sup>40</sup> In line with other industrial and ethnically mixed cities across America, Philadelphia experienced large-scale processes of deindustrialization, white flight to the suburbs, and significant in-migration by African Americans and other nonwhite ethnic groups. These changes transformed the economic and physical landscape of the city.

The first and probably the most pervasive change Philadelphia experienced was economic. Like other industrial centers, such as Detroit, Pittsburgh, St. Louis, and Cleveland, Philadelphia fell into decline in the second half of the twentieth century. Yet this decline had begun in the 1890s, when iron and steelmaking had shifted from Philadelphia to the Midwest. In the 1920s, an increasing number of textile manufacturers left the city for the nonunionized factories of the US South. Philadelphia also suffered severely during the Great Depression. In the 1950s, the city began to lose jobs, population, and revenue as white middle-class Americans moved to the suburbs, taking much of their buying power and their property tax revenue with them. Then, in the mid-1970s, the big wave of plant closings began.<sup>41</sup> From 1970 to 1980, Philadelphia lost 111,756 manufacturing jobs, 44 percent of its manufacturing employment.<sup>42</sup>

The United States as a whole had come out of the 1970s in bad shape. The expansion of worldwide free-trade agreements since the 1960s had been unfavorable to US workers. Industrial goods could now be more cheaply imported from abroad. With more and more plants closing or downsizing, most dramatically in the car-manufacturing center of Detroit, fewer Americans found jobs in the manufacturing sector. During the 1970s alone, the United States lost between thirty-two and thirty-eight million industrial jobs.<sup>43</sup> Additionally, two energy crises had led to a recession characterized by a double-digit inflation and high unemployment rates. In 1980, when Ronald Reagan took office, unemployment stood at 7 percent, rising to 9 percent by 1983. While Reagan promised the remaking of America, for many struggling urban centers, the Reagan administration's turn to deregulation and laissez-faire economics served the death blow to their manufacturing industries.<sup>44</sup>

With major employers closing or leaving and its tax base shrinking, Philadelphia became poorer. By 1972, the city faced a deficit of about \$60 million, which had grown to \$85 million only four years later.<sup>45</sup> Pennsylvania's House of Representatives worried that Philadelphia's deficit would "degenerate into a billion-dollar catastrophe," leading to insolvency.<sup>46</sup> Matters looked brighter in the 1980s, but the city budget remained tight. In 1986, the year of the waste workers' strike, Philadelphia had a budget deficit of \$9.6 million. Predicting a \$47 million gap for fiscal year 1987, the city government was forced to cut its staff, laying off 2,400 employees (nearly 10 percent of its workforce), sell city property, and borrow money to cover its debts. Municipal labor unions became recalcitrant when those cuts took hold, as the sanitation workers' strike vividly illustrated.<sup>47</sup>

The financial situation of individual households reflected that of the city. From

1949 to 1979, the household income of Philadelphians fell from almost even with the regional median to only 73 percent of it. In 1980, unemployment was 50 percent higher than the regional average, and more than 20 percent of city residents struggled to survive on an income below the poverty line.<sup>48</sup> A study from 1984 showed that ninety-one thousand households in Philadelphia were struggling to pay for basic services such as electricity and heating.<sup>49</sup> Economic changes had led to an increasing number of abandoned and potentially polluted industrial sites. Meanwhile, the city was obtaining so little revenue from taxes that it could not finance its own municipal services, such as education, housing rehabilitation, and support programs for its low-income population, let alone waste disposal.

On top of these economic and industrial changes, Philadelphia was witnessing a major social transformation. While the population of central cities across the United States grew by 10 million between 1950 and 1970, the surrounding suburban regions grew by 85 million, with a net out-migration of 13 million people.<sup>50</sup> Philadelphia had experienced a first wave of suburbanization in the nineteenth century, when rail and streetcar lines had opened up new residential districts to serve a white upper class.<sup>51</sup> In a second wave between 1950 and 1980, as white families moved out to newly established suburbs, the city lost about 250,000 residents, a quarter of its population.<sup>52</sup> At the same time, the Black population in the city increased. From 250,000 in 1940, it grew to 375,000 by 1950 and 655,000 by 1970, when African Americans represented one-third of the population. This trend continued in the 1980s.<sup>53</sup> These demographic changes exacerbated the racial and social differences as well as the tensions between the city and its wealthier suburbs.

Through deindustrialization, many US cities imploded in the 1970s and 1980s. The disappearance of jobs and the subsequent poverty created problems that included crime, widespread drug abuse, and violence. According to one historian, Philadelphia's Center City became a place "abandoned economically and politically, literally and metaphorically," and in the eyes of many white Philadelphians, the city's suburbs functioned as "defended spaces, bolstering their borders against the urban malaise of the city."<sup>54</sup> Philadelphia's Mayor Frank L. Rizzo (1972–80) heightened racial tensions through his policies. While his supporters praised him for being tough on crime, including taking a tough stance on the city's Black Power movement and tolerating police brutality, his critics accused him of discriminating against minorities. With the election of Wilson Goode as mayor in 1984, the political representation of African Americans changed. Goode became the city's first African American mayor, serving until 1992.<sup>55</sup>

On Goode's watch, however, the ethnic makeup of Philadelphia also became a pronounced issue in the context of the *Khian Sea*. How could a city with a large African American population and an African American mayor end up dumping on Afro-Caribbean Haiti?

In time for the US Bicentennial celebration in 1976, marking the two-hundredth anniversary of the US Declaration of Independence, Philadelphia attempted to gloss over these financial challenges, social changes, and racial tensions. Three blocks comprising Independence Mall were added to Independence National Historical Park. Two new museums, the Afro-American Historical and Cultural Museum (later renamed the African American Museum in Philadelphia) and the Mummies Museum, opened in 1976, followed by the Port of History Museum on Penn's Landing in 1981.<sup>56</sup> A sense of historic grandeur conveyed itself to those roaming the streets, including those sweeping and clearing the garbage. It foreshadowed a strange parallel to another struggling city with a grand history: Gonaïves, Haiti, the later dumping place of Philadelphia's garbage.

## Washington Ends Philadelphia's Ocean Dumping

Philadelphia's Bicentennial celebrations did not fulfill the expectations of city planners and officials. Far fewer than the anticipated one hundred million visitors came to Philadelphia. There were protests, and an outbreak of Legionnaire's disease killed thirty guests at a hotel in Center City. The Bicentennial year was a disaster.<sup>57</sup> The celebrations also compared unfavorably to an earlier mass event that had drawn crowds to Philadelphia: the celebration of the first Earth Day.

On April 22, 1970, approximately twenty million Americans came together to voice their concern about the environmental crisis. Colleges held teach-ins. People gathered in parks and schools, on city streets, and in front of corporate and government office buildings. There were speeches, discussions, and acts of ecotheater. People wore flowers and gas masks and participated in acts of civil disobedience. In San Francisco, activists poured oil into the reflecting pool at the headquarters of Standard Oil. In New York City, marchers held up dead fish to illustrate the pollution of the Hudson River.<sup>58</sup>

While many cities observed Earth Day and perhaps held a few additional events in subsequent days, Philadelphia organized an entire Earth Week.<sup>59</sup> A series of events crystalized how Philadelphians felt about pollution, urban sprawl, nuclear fallout, the harms of pesticide use, wilderness preservation, and waste disposal.<sup>60</sup> They gathered in Fairmount Park to listen to the poet Allen Ginsberg

and Senator Edmund Muskie, and in Independence Hall to meet with Senator Hugh Scott and the environmental activist Ralph Nader. These mass rallies were part of a “seven day ecological extravaganza.” Participants could take a tour of the city’s major polluters and were offered balloons holding “fresh air,” filled from compressed air tanks that came from a medical supply center.<sup>61</sup> During “trash-ins,” school students collected waste for recycling.<sup>62</sup> In the city where two centuries earlier the Declaration of Independence and the US Constitution had been signed and adopted, Philadelphians enthusiastically signed up for environmental protection.

While President Richard Nixon had taken no official role during Earth Day, he endorsed its activities. He found himself heading a bipartisan consensus on the relevance of environmental protection. It was an issue that had already played a small but fundamental role in President Lyndon B. Johnson’s Great Society program of reforms. With public support for environmental reform at its peak, Nixon made it a centerpiece of his domestic agenda, consolidating legislation of earlier decades into one coherent national framework. On January 1, 1970, Congress enacted the National Environmental Policy Act (NEPA), through which the enhancement of the environment became national law. The act also created the Council on Environmental Quality as part of the White House administration.

An estimated seven thousand people jam a quadrangle at the Independence Mall in Philadelphia on the eve of Earth Day, April 22, 1970. © Picture Alliance/Associated Press.





In July 1970, Nixon created the Environmental Protection Agency (EPA) as an independent agency, with headquarters in Washington, DC, and ten regional offices throughout the country.<sup>63</sup> Edward W. Furia, director of Philadelphia's 1970 Earth Week, became one of the regional directors of the EPA.<sup>64</sup>

The new legislation utterly changed cities' approach to environmental protection. It made it easier to enact and enforce strict protection legislation. Earlier, any city that took the lead in passing environmental legislation had risked losing industries to neighboring regions. Now, federal minimal standards put municipalities on an equal footing with their upwind and upstream neighbors and also offered grants to support local environmental programs.<sup>65</sup> Yet the new national legislation also challenged cities' autonomy.<sup>66</sup>

Of all the changes that the 1970s brought to environmental governance, ocean protection was most important to Philadelphia. For decades, ocean dumping had provided a convenient method of waste disposal, since proponents believed that flowing water lent itself readily to dissolving and dispersing whatever was put into it. Protest against the practice built up slowly after scientists started to investigate the potential ill effects of open-water disposal in the 1940s. It came to a climax around 1969, when news broke of the planned scuttling of an old military vessel loaded with roughly twenty-two thousand tons of outdated chemical weapons. The outcry was enormous and global. Great Britain sent official protest notes to the United States government on behalf of the Bahamas and Bermuda. Iceland voiced official concern for its fisheries. The Soviet Union scolded the United States for its anti-environmentalism. In the United States, antiwar and environmental activists formed a coalition against ocean dumping.<sup>67</sup>

In the greater Philadelphia region, these protests persisted into 1971, when the city debated moving to a larger ocean-dumping site because its original site was filling up too quickly.<sup>68</sup> Residents of Philadelphia and a number of coastal towns opposed the plan. The former worried primarily about the ecological effects of sewage sludge dumped in the marine environment, the latter about sewage washing up on shore and its effects on tourism.<sup>69</sup> In 1971, Joseph M. Boyd of Princeton, New Jersey, single-handedly filed a total of twenty-seven citizen suits against the companies barging the waste out to sea, the DuPont Corporation, and the City of Philadelphia as the sources of the material.<sup>70</sup>

Under pressure, Nixon turned ocean dumping from a "neglected environmental problem" to a top national priority.<sup>71</sup> The Council on Environmental Quality conducted a study suggesting that between 1949 and 1968, the average volume of waste dumped into the ocean annually had increased from 1.7 million tons

to 37 million tons. Much of the material was “harmful or toxic to marine life, hazardous to human health and esthetically unattractive.” Because of the decreasing capacity of US landfills and the comparatively high economic and political costs of opening new landfills, this volume, the report predicted, would increase further.<sup>72</sup> For a US government under the spell of modern environmentalism, the idea that large bodies of water could serve as waste receptacles was fundamentally reversed. In 1972, Congress passed the Marine Protection, Research, and Sanctuaries Act (also known as the Ocean Dumping Act), which prohibited the unpermitted dumping, or transportation for dumping, of radiological, chemical, and biological warfare agents, chemicals, and industrial waste in ocean waters within US jurisdiction. All other ocean dumping was to be phased out by 1980.<sup>73</sup> The EPA formulated an interim permit system to monitor and regulate cities’ ocean dumping programs until they were phased out. Philadelphia’s permit required that the city reduce the quantity of barged sludge before 1979 and stop ocean dumping by December 1980.<sup>74</sup> In the next eight years, Philadelphia would have to come up with alternatives, submitting quarterly progress reports to the EPA.<sup>75</sup>

Philadelphia responded by taking the EPA to court, arguing that its decisions were based on faulty conclusions reached in a January 1975 report. Philadelphia put forth two alternative studies showing negligible effects of sewage sludge dumping on marine life. The evidence of “adverse impact,” the city claimed, was inferential at best.<sup>76</sup> Hearings began on May 19, 1975, before a panel of two scientists and a presiding officer, with the EPA, the National Wildlife Federation, the Environmental Defense Fund, the State of Maryland, and the State of Virginia intervening in opposition to the city. The hearing concluded that there was substantial reason to discontinue Philadelphia’s ocean dumping, but Philadelphia’s resistance continued.<sup>77</sup> Experts from the EPA disputed with Philadelphia’s Water Department as to the scientific evidence for the environmentally damaging effects of ocean dumping. Key to this debate was the assessment of the toxicity and harmfulness of sewage sludge, whose composition depends on the nature of a city’s economic and industrial activities. Generally, sewage sludge may contain up to sixty thousand toxic substances and chemical compounds, among them polychlorinated biphenyls (PCBs), chlorinated pesticides (such as DDT), chlorinated compounds (such as dioxin), heavy metals, and microbial pathogens, along with substances like asbestos, petroleum products, and industrial solvents.<sup>78</sup> Because of the composition of Philadelphia’s industry, the city’s sewage sludge was so high in cadmium and mercury that it was classified as hazardous waste

according to the definition established by the Resource Conservation and Recovery Act (RCRA) in 1976.<sup>79</sup>

Still, critics of Philadelphia's ocean dumping were unable to cite actual evidence of damage. Philadelphia's engineers pointed out that when political decisions had been made, the paucity of accurate methods for measuring the effects of ocean dumping made analysis difficult. Although Philadelphia had started ocean dumping in 1961, the first systematic study to gauge environmental effects was not conducted until 1972. Then the Franklin Institute, an independent scientific and educational institute that had been commissioned and paid by the city to conduct the study, concluded that ten years of ocean dumping had done "little or no perceptible damage."<sup>80</sup> The EPA remained unimpressed and continued to wrestle with Philadelphia's Water Department over pollution standards and thresholds. The problem was that if standards were not sufficiently stringent, dangerous amounts of harmful pollutants could be introduced into the marine environment. Conversely, if standards were too strict, or based on unreliable data, the costs of alternative methods of disposal could prove an unnecessary economic burden. Philadelphia's protests were to no avail. Despite four additional court cases, Philadelphia was ordered to stop ocean dumping by December 31, 1980.<sup>81</sup>

Philadelphia was not the sole community in the US struggling with the EPA over ocean dumping. Irrespective of the final deadline, communities were united by the same anxiety: they were already struggling to recycle, burn, export, sell, or bury growing amounts of municipal solid waste, and now they had to find ways to deal with even more of it. Often these cities did not use the time to come up with alternatives. In 1982, Philadelphia started to experiment with incineration at sea but abandoned the project after a couple of months.<sup>82</sup> The termination of ocean dumping brought the waste problem ashore again.

## How RCRA Changed the Rules of the Game

As the Ocean Dumping Act effectively washed waste ashore, environmental activists and administrators scrutinized the situation on land. Attention shifted from the marine environment to land and from polluted sewage sludge to a broader spectrum of waste materials, now divided into the categories of nontoxic garbage and hazardous waste. President Johnson had called for "better solutions" for waste disposal and the Solid Waste Disposal Act of 1965 had ushered in a new era of waste management.<sup>83</sup> In the 1980s, the composition of a city's waste truly started to matter.<sup>84</sup> In 1976, Congress had passed an amended version of the Solid Waste

Disposal Act of 1965—the Resource Conservation and Recovery Act. RCRA for the first time defined hazardous waste (subtitle C) as distinct from solid waste (subtitle D). It singled out waste objects that by their composition would pose “a substantial threat to human health or the environment.”<sup>85</sup> Standards for the safe treatment, storage, and disposal of hazardous waste, alongside an elaborate tracking system designed to show the whereabouts of toxic substances from “cradle to grave,” were due to go into effect on November 19, 1980.<sup>86</sup>

RCRA brought Philadelphia’s waste crisis to a new level.<sup>87</sup> Around the city, 380 places were identified as potential hazardous-waste production sites. These included industrial sites associated with the production of textiles, ferrous and nonferrous metals, inorganic chemicals, pharmaceuticals, plastics and synthetics manufacturing, paint and related products, and electroplating.<sup>88</sup> Prior to the enactment of RCRA, industries producing hazardous waste hired outside truckers or chemical brokers to manage disposal. Both would take the waste off the producer’s hands for a small fee—together with the liability for the material. Many states, including Pennsylvania, did not require a permit for waste haulers to operate: anyone with a truck could go into the business. Since the state had little control over disposal, hazardous material was dumped wherever these freelance haulers thought “they could get away with it”—in streams, fields, woods, vacant lots, unsafe landfills, abandoned mine shafts, city warehouses, suburban lagoons, and storm drains.<sup>89</sup>

RCRA instituted a strict protocol for disposal of hazardous waste. Waste producers were required to obtain an operating permit from the EPA or an authorized state agency, and any facility involved in the generation, storage, treatment, disposal, or transport of hazardous wastes had to prepare a manifest for recordkeeping and reporting.<sup>90</sup> A group of Philadelphia journalists followed the new cradle-to-grave route of the paper and ceramic filters used to purify a batch of pesticides at the Rohm & Haas plant. The drums containing the waste were first collected at a concrete storage area equipped with underground tanks to collect any spills. Then their content was tested, inventoried, and reported to the government. They were loaded on a truck bound for the region’s only hazardous waste incinerator at Rollins Environmental Systems, Inc., in New Jersey, for incineration at two thousand degrees Fahrenheit. Then the wastes were again tested, inventoried, and reported to the government. The new waste products, the ash produced in the incineration, and the sludge from the pollution control systems were also tested, inventoried, and reported to the government before being buried in a hazardous-waste landfill in South Carolina.<sup>91</sup>

This process was both complicated and expensive for landfill operators and waste generators. Across the nation, the number of landfills plummeted by almost 50 percent after 1976.<sup>92</sup> Between 1978 and 1981, fifty waste sites in the Philadelphia area went out of business.<sup>93</sup> The costs of trash disposal exploded. In 1978, landfilling of one ton of toxic material cost \$2.50; in 1987, it was \$200. For Philadelphia, these changes meant that waste disposal costs skyrocketed from \$19.1 million in 1981 to a projected \$66 million in 1988.<sup>94</sup> Additionally, the city faced the challenge of safeguarding public health without squeezing the life out of thousands of businesses dependent on chemicals.<sup>95</sup> “Industries [were] becoming ‘desperate,’” according to Edward Mullen, head of Folcroft Landfill, to find suitable disposal sites.<sup>96</sup>

Increasingly strict regulations for toxic waste management induced many industries to relocate to an area with cheaper facilities or to dump their waste illegally. In 1973, tons of illegally dumped industrial waste was piling up along 84th Street in a section of Philadelphia that was part of the Tinicum Wildlife Preserve.<sup>97</sup> In March 1977, the Pennsylvania Department of Environmental Resources (DER) discovered a site in Chester, Pennsylvania, where thousands of drums and numerous six-thousand-gallon tankers filled with combustible, explosive, and toxic waste chemicals had been abandoned. Storm drains had carried the wastes directly into the Delaware River. Two major fires in February 1978 had destroyed many of the drums, and the remainder posed a continuing combustion hazard. While the idea behind RCRA and the cradle-to-grave system was to channel all dangerous chemical wastes produced in the United States “into approved treatment and storage,” its short-term effect was the dramatic increase of precisely the sort of improper and illegal disposal that the law was designed to halt.<sup>98</sup>

DER’s three waste inspectors were responsible for ten northeast Pennsylvania counties and could do little to prevent improper dumping.<sup>99</sup> In 1979, DER proposed a package of bills to punish illegal dumpers, along with a tracking system to monitor the location, movement, and disposal of all hazardous waste in the state. The goal was to determine what became of the millions of tons of hazardous waste both produced by Pennsylvanian industries and trucked into the state for disposal. The legislation also sought to increase maximum fines for violating hazardous waste laws from \$300 to \$25,000 a day and to mandate prison sentences of up to two years for persons who illegally hauled or disposed of hazardous waste.<sup>100</sup> While this legislation was well-meant, it encouraged organized crime to develop its own hazardous-waste management business.<sup>101</sup> Matters came to a head in 1980, when Philadelphia’s grand jury found the owner of a

defunct waste-management facility guilty of bribing city officials to let it dump hazardous waste at its facility in Southwest Philadelphia.<sup>102</sup> A year later, another multimillion-dollar court case concerned the illegal dumping of hazardous material on city premises. Between 1973 and 1975, fifteen companies had “improperly disposed” of several thousand tons of hazardous waste material into the landfill in Southwest Philadelphia.<sup>103</sup> Although DER had told Philadelphia officials of possible environmental violations, the city could not close the landfill for lack of an alternative site.<sup>104</sup>

Abandoned and illegal hazardous-waste dumps made news all over the United States. In Toone, Tennessee, investigators in 1978 discovered three hundred thousand buried drums of pesticides that polluted an underground source of drinking water. A case in Louisville, Kentucky, became known as “Valley of the Drums”: one hundred thousand drums of toxic chemicals had been dumped into and alongside a river, where they corroded and spilled open, poisoning the river and the underground drinking water.<sup>105</sup> The community of Love Canal, in Niagara Falls, New York, became the best-known symbol of the trouble with unregulated, abandoned, or leaking landfills. For ten years beginning in 1942, Hooker Chemicals and Plastics used Love Canal as a dump for waste, including halogenated organics, pesticides, and benzene. In 1953, the site was covered, and homes were built nearby. Only a decade later, residents had started to complain of bad odors and residues. Problems grew worse in the 1970s as the groundwater table rose and runoff began contaminating nearby residential areas. By 1978, Love Canal had become a national media sensation, and President Jimmy Carter declared it a federal health emergency.<sup>106</sup>

## Environmental Citizenship in the Philadelphia Region

Parallel to the congressional investigations of Love Canal, the *Philadelphia Inquirer* ran a week-long “Toxics Series” to discuss the issue of hazardous-waste sites locally. Articles alerted readers not only to the policy changes connected to the implementation of RCRA but also to the dire situation in the greater Philadelphia area. Postwar deindustrialization had left behind “a plethora of hazards,” including brownfields, illegal hazardous-waste dump sites, and toxic chemicals in the sediments of the Schuylkill and the Delaware. People in the metropole had to deal with abandoned and hazardous industrial buildings and lead-based paint on the interior surfaces of old homes.<sup>107</sup> After a six-month investigation, the *Inquirer* concluded that while the problem with hazardous-waste was a

national one, “nowhere was the situation worse” than in greater Philadelphia. Through meticulous research, Rod Nordland and Josh Friedman, two *Inquirer* journalists, had unearthed dozens of cases of toxic waste dumping. They had found arsenic seeping into the ground, places where villagers had to drink bottled water because of trichloroethylene in the groundwater, PCBs leaking from an abandoned warehouse, and firefighters who were incapacitated as they battled with a landfill that spontaneously ignited.<sup>108</sup>

The *Inquirer’s* warning about the omnipresence of toxic sites resonated with Philadelphians. After Earth Day, a number of environmental activist groups began to devote their time to the new topic of pollution. Ian McHarg, a landscape architect teaching at the University of Pennsylvania, explicitly linked environmental issues to urban sprawl and metropolitan development. Through his class “Man and Environment” and his 1969 book *Design with Nature*, he taught students to see the wetlands, rivers, streams, aquifers, and forests in the Delaware Valley as key elements in the hydrological cycle, worthy of protection from both destruction and contamination.<sup>109</sup> In 1967, the Delaware Valley Citizens’ Clean Air Council was founded as a nonprofit volunteer group and has since played an important role in lobbying for tougher environmental laws and litigation.<sup>110</sup> In 1979, the Delaware Valley Toxics Coalition (DVTC) was formed. Initially concerned about air pollution, members quickly turned their focus to toxic waste.<sup>111</sup> The group provided assistance to individuals and organizations who were faced with pollution problems or threatened by proposed facilities that might create such problems.<sup>112</sup> One of its biggest successes was the passage of Philadelphia’s “right-to-know” legislation, which required companies to publicly disclose any toxic chemicals that they might use, manufacture, store, or emit.<sup>113</sup>

Alerted by the media, citizens in the greater Philadelphia area paid increasing attention to the landfills and waste-disposal facilities in their neighborhoods. They had their eyes particularly on the phasing out of RCRA interim permits, that is, temporary permits for waste disposal that were due to be replaced by a long-term permit program governing all treatment, storage, and disposal facilities, with detailed requirements for all aspects of design, construction, operation, and maintenance.<sup>114</sup> In July 1983, Fran Scullion, codirector of the Delaware Valley Toxics Coalition Education Fund, filed a Freedom of Information Act request with the EPA for “a list of the names and addresses of all companies” in Pennsylvania whose interim permits were under review.<sup>115</sup>

Among the long list they received, one company in particular, Ace Service Corporation from southern Philadelphia, whipped up strong feelings. Ace was

one of the independent waste haulers serving Philadelphia.<sup>116</sup> In the summer of 1982, the company had applied for a permit to store hazardous waste at their facility at 19 Snyder Avenue. The property was within an industrial area in the Pennsport–Queens Village neighborhood in South Philadelphia but less than half a mile from residential areas. The company planned a treatment, storage, and disposal facility for hazardous wastes from small industrial generators within the Philadelphia region, such as print shops and tool-and-die companies. Ace would collect the material and haul it to chemical-recycling companies or state-approved toxic-waste landfills.<sup>117</sup> The initiative would serve both the business community and the environment, according to Terry Siman, an attorney representing the company. Until then, Philadelphia’s small businesses had difficulties getting rid of their hazardous waste. Without a proper disposal facility, they were “dumping the stuff in the toilets or in a drum out back”—often illegally, was the subtext.<sup>118</sup> Both the DEP and the EPA found Ace’s application well thought through. The city of Philadelphia had approved the plan.<sup>119</sup>

The community of Pennsport would have none of it. A first meeting was called in January 1983, chaired by the Pennsport Civic Association and with representatives from the EPA, the DEP, the fire department, and other citizen action groups, such as the Delaware Valley Toxics Coalition Fund. Ace refused to attend.<sup>120</sup> The evening’s most famous guest was Vince Fumo, the Democratic Party representative of the district in the Pennsylvania Senate. People were concerned about health risks, spills, emergency evacuation, and the value of their property. Fumo raged that his district would not be “the garbage dump of the City or anywhere else.”<sup>121</sup> Pennsport Civic Association established a Hazardous Waste Task Force that coordinated a battle lasting almost two years.<sup>122</sup> Early on, they allied with Frank L. Rizzo, a former mayor of Philadelphia who was setting himself up for a return to office.<sup>123</sup> On May 16, 1984, some two hundred opponents of the facility marched through the streets of South Philadelphia to demand city action.<sup>124</sup> By early summer 1984, South Philadelphia’s residents had won the city’s support. It opposed the permit.<sup>125</sup>

The sticking point in the controversy about Ace was the proximity of a hazardous waste site to residential areas. The nearest homes were about a quarter of a mile from the site—a distance which, according to federal and national legislation, was permissible. Yet for the people who lived in those homes, this felt too close.<sup>126</sup> “Toxic materials should not be stored in and transported through a densely populated area such as South Philadelphia, nor should a storage facility be permitted within city limits,” said Harold S. Levin, a member of the board



of directors of the Washington Square West Project Area Committee and Civic Association.<sup>127</sup> Ace defended its choice of site, pointing out that their property was zoned for lease-limited industrial use, surrounded by other industries, and separated from Pennsport by Interstate 95. Additionally, they were not bringing hazardous waste into the city but collecting material that was “already in Philadelphia” for disposal outside.<sup>128</sup> The incident underscored the difficulty of finding sites for new waste facilities at a time when the government was also tightening controls on hazardous waste.

The problem was not unique to South Philadelphia. In 1983, community organizations from Lower Moreland Township, a small community just north of Philadelphia, approached US Senator John Heinz about the Bethayres landfill, which, they alleged, had been “illegally accepting toxic wastes.”<sup>129</sup> The same year, a small tract near the Schuylkill River in Upper Merion Township, Tyson Dump, caught the attention of the EPA and the media. From 1962 to 1970, an unknown quantity of different chemicals had been dumped there. Now the closed dump was to become one of the earliest Superfund sites in the United States.<sup>130</sup> In the summer of 1984, Clearview Landfill in Delaware County, about fifteen miles southwest of Philadelphia, became the next hot issue. The fifty-acre private landfill touched the city’s borders in a place that, since the late 1970s, had been transformed by urban development from marshland into a patchwork of suburban communities. The landfill had operated from 1958 to 1975, but the dumping of debris and frequent fires had continued after its closure. Now residents feared that chemicals might be leaking from underneath the hill. In 1983, tests on portions of the landfill confirmed that a creek at the western edge of the landfill was polluted with PCBs and chlordane.<sup>131</sup> Almost every month, it seemed, journalists and neighborhood associations uncovered a new toxic-waste dump.

## Waste Disposal in a Confined Space

From colonial times onward, Philadelphia relied on lands beyond its city limits for inner-city services. The primary causes for this were geographical and administrative. While enabling growth, Philadelphia’s riparian environment also imposed limits on land use. European settlers took the Schuylkill and the Delaware as natural borders for administrative entities. The Delaware divided what was to become the state of Pennsylvania from the state of New Jersey.<sup>132</sup> The Schuylkill created spatial limits that paralleled early conservationist thought and racial and class separation. With the creation of Fairmount Park in 1867, both

sides of the river just north of the Philadelphia Water Works were turned into recreational areas, precluding any other kind of land use.<sup>133</sup> Local government measures further limited Philadelphia's inner-city land usage. In 1682, William Penn had divided Pennsylvania into three counties—Philadelphia, Bucks, and Chester. When established, Philadelphia County was framed by the Delaware to the east, by Bucks County to the north, and by Chester County to the south. Its western boundary was undefined, theoretically leaving vast opportunities for Philadelphia's urban growth. But the idea of unlimited westward expansion died with the formation of two new counties, Berks County and Montgomery County, in the eighteenth century.<sup>134</sup> In the nineteenth century, with the massive growth accompanying its industrialization, the city reached its county limits. In 1854, Philadelphia absorbed thirteen surrounding townships, six boroughs, and nine districts, among them the important mill towns of Kensington and Manayunk. Through the Consolidation Act, the city of Philadelphia became geographically identical with its county.<sup>135</sup> The spatial limitations imposed by natural geography and political administration defined Philadelphia's waste-management practices. Given the growing scarcity of waste disposal sites within the city-county limits, Philadelphia was bound to use someone else's territory for disposal.

New Jersey became Philadelphia's primary resource for waste disposal, illustrating how the city externalized waste locally long before exporting it internationally. In the boom years of the sanitary landfill, New Jersey and its vast wetlands had become closely associated with the waste business. *Harper's* magazine dubbed it the "Trash State."<sup>136</sup> Over the course of European settlement, New Jersey's vast wetlands had come to signify a hindrance to economic development. In the industrializing decades from the late nineteenth century onward, they came in handy as dumps for the growing piles of waste from the urban areas near the coast, including Philadelphia and New York City.<sup>137</sup>

For decades, Philadelphia and the surrounding communities enjoyed the mutual benefits of a waste-disposal agreement: one side took care of the waste, the other paid for it. By the 1970s, this relationship was becoming strained. Shortly after the creation of the EPA, New Jersey established its own state environmental agency, the Department of Environmental Protection (DEP). In the early 1970s, the DEP issued a warning that New Jersey was facing a major waste crisis because of lack of landfill space. Still, New Jersey continued importing out-of-state garbage, such as incinerator ash from Philadelphia.<sup>138</sup> The situation escalated in 1973, when Philadelphia considered phasing out waste incineration to meet the EPA's new, more stringent air-pollution standards and to ease citizens' complaints

about “garbage fumes.”<sup>139</sup> Four of Philadelphia’s six incinerators could not meet the standards of the city’s air-quality code, and the idea was to close them by mid-1974.<sup>140</sup> City officials anticipated sending all waste to sanitary landfills instead. With no landfills of its own, the city would send all of its waste to New Jersey. Communities across the Delaware responded fervently. Protesters massed at the gates of the Mac and Kinsley landfills attempting to prevent trucks laden with Philadelphia waste from entering. A “Great Trash Rebellion” was rising.<sup>141</sup>

In 1973, New Jersey passed the Waste Control Act, which banned out-of-state refuse.<sup>142</sup> Philadelphia contested the ban in court. The case went all the way to the United States Supreme Court, which issued a 7–2 ruling that struck down the Waste Control Act as an unconstitutional restriction of interstate commerce.<sup>143</sup> Supreme Court justices declared that such a ban must be seen as an “economic protectionist measure.” It was “immaterial” whether the legislative purpose of such a ban was “to protect New Jersey’s environment or its economy.”<sup>144</sup> By declaring waste a commodity in interstate commerce, the ruling allowed interstate disposal practices to continue. This favorable decision, however, allowed only a brief reprieve for Philadelphia.

Philadelphia’s waste crisis of the summer of 1986 had been long in the making. Long before the *Khian Sea* left the city, Philadelphia’s overextended and flawed disposal infrastructure, its financial precarity, and the geographic and administrative idiosyncrasies of the city-county created the need to dispose of city waste beyond city premises. Meeting this need, communities in New Jersey served as Philadelphia’s disposal outlet long before communities in the global South did. The emergence of modern environmentalism in the United States, with ever-stricter waste disposal and environmental protection rules and communities’ growing awareness of the hazards in their immediate neighborhoods, tightened the screws on Philadelphia’s established waste-disposal system while illustrating the asynchronicity of the global waste trade. In the fall of 1986, the *Khian Sea* sailed down a Delaware River that was much cleaner than it had been half a century before, into an Atlantic that US communities no longer considered as the ultimate dumping ground for all sorts of toxic material, and away from a country where the premises of hazardous waste disposal were legally defined. The *Khian Sea*—and other toxic ships—sailed toward lands where discourses on and practices of (hazardous) waste disposal were differently framed, allowing for a continuation of the cheap dumping no longer possible in the United States.