West Ham and the River Lea

A Social and Environmental History of London's Industrialized Marshland, 1839–1914

JIM CLIFFORD

FOREWORD BY GRAEME WYNN

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Introduction

London does not end at the limits assigned to it by those acts of Parliament which take thought for the health of the Londoners. More suburbs shoot up, while official ink is drying. Really, there is no limit to London; but the law must needs assign bounds; and, by the law there is one suburb on the border of the Essex marshes which is quite cut off from the comforts of the Metropolitan Buildings Act; – in fact, it lies just without its boundaries, and therefore is chosen as a place of refuge for offensive trade establishments turned out of the town, – those of oil boilers, gut spinners, varnish makers, printers ink makers and the like. Being cut off from the support of the Metropolis Local Managing Act, this outskirt is free to possess new streets of houses without drains, roads, gas, or pavement. It forms part of the parish of West Ham.

– *"Londoners over the Border,"* Household Words

Henry Morley, a staff writer working for Charles Dickens's weekly *Household Words,* visited West Ham in 1857 and wrote an unattributed lead article for the magazine about people living in what he described as squalid and unhealthy conditions. Morley recognized the profound transformations that were beginning to take hold in the industrializing Lower Lea Valley and contrasted the "many tall smoking chimneys that mark out the line" of the River Lea with the "broad green Essex plain" that on a sunny day still appeared to be "master of the situation."[1] When he turned from broad vistas to the pockets of settlements growing on the marshlands of southern West Ham, he found a landscape that was inundated with sewage. Medical knowledge during this period associated marshlands, decomposition, and bad smells with disease, so Morley, a university-educated author whose work had appeared in the *Journal of Public Health,* reasoned that these conditions posed a serious danger to

West Ham residents. He described, for example, a "pestilential ditch" with "three ghostly little children lying on the ground, hung with their faces over it, breathing the poison of the bubbles" and "fishing around with their hands in the filth."[2] Although Morley's concern was not grounded in our present-day conceptions of environmental health, he clearly understood that rapid suburban development on increasingly polluted marshlands contributed to harmful social conditions. London's unhealthy expansion was a significant political issue, and his article concluded with a call for West Ham's recently formed local board of health to improve the sanitary conditions in the suburb.

In the half-century that followed Morley's visit, the "green Essex plain" increasingly gave way to heavy industry and crowded housing. Between 1851 and 1901, the population of West Ham grew from 18,817 to 267,358. In the decade that followed, it grew by another 21,672, maintaining West Ham's status as the largest suburb in Greater London and one of the most populous independent municipalities in England and Wales.[3] Political independence meant that West Ham was both part of and separate from London. As a book reviewer for the *Economic Journal* put it in 1908, the suburb "was vaguely known as that of a spot somewhere near London to which people went with reluctance if they had business there, and from which they returned with joy as soon as the business was over."[4] London's industrial economy migrated east and concentrated in West Ham during the second half of the nineteenth century, but the independent borough remained both physically and conceptually beyond London's East End.

People moved to West Ham because of the employment opportunities at its docks and the many factories that lined its rivers.[5] In 1855, the large Victoria Dock came into operation, transforming the remote marshlands of southern West Ham into a major transportation hub and workplace. Before the construction of this dock, the scattered settlements in West Ham stood on higher ground, avoiding the wetlands adjacent to the Lower Lea and the Thames. The dock drew workers to southern West Ham, establishing new residential districts on the low-lying marshes. Marshland housing was built along the drainage ditches, which quickly became the stagnant open sewers described by Morley. In the decades that followed, the local board of health and municipal borough built a piped sewer network and alleviated the foul conditions of 1857, but the interrelated challenges of poverty, insanitary and crowded housing, pollution, and flooding continued to plague this industrial suburb, built within the unstable riverine environment at the intersection of the Lower Lea and the Thames Estuary.

For readers of the *Economic Journal,* West Ham may have been little more than a vaguely known and unpleasant "spot somewhere near London," but for those who were concerned with the labour movement and labour politics, it stood at the forefront of social and political transformations at the end of the nineteenth century. New Unionism grew in and around the suburb, which housed a large number of low-income workers. The Bryant and May match factory, where female employees organized a strike in 1888 and helped start the New Unionism movement, was in Bow, on the London side of the Lower Lea Valley. Many of the dockers who were involved in the 1889 strike lived and worked in southern West Ham. Will Thorne, who led the unionization of the gasworkers in 1889, lived in Canning Town and became an important municipal and national politician. The India Rubber, Gutta Percha, and Telegraph Works factory in Silvertown was the site of yet another major strike in the summer of 1889.[6] In 1892, three years after the upsurge of New Unionism, West Ham South elected J. Keir Hardie as the first independent labour MP, a year before he helped found the Independent Labour Party. Six years later, a labour and socialist coalition took control of the municipal government, which was another first for labour politicians in Britain. Social segregation, the concentration of large factories, and unionization all contributed to the rise of working-class politics, but labour politicians also echoed Morley and articulated grievances regarding the unhealthy and unpleasant local environment.

Dirty and crisis-prone urban conditions reinforced the social and economic divisions in Greater London and helped enable the rise of social democracy in West Ham. From an environmental or social perspective, the marshlands in the Lower Lea Valley and Thames Estuary were not an ideal locale for rapid suburban expansion. The speed and scale of industrial development and population growth completely transformed the environment and severely damaged the River Lea. As with the many other shock cities of nineteenth-century industrialization, economic factors drove urbanization in the Lower Lea Valley, and many decades would elapse before the environmental, public health, and social consequences of crowded living conditions and polluted landscapes were addressed. Environmental instability played a role in the social and political volatility of West Ham. The expansive marshlands and constant threat of flooding created considerable fiscal challenges, as everything from drainage to social services had to be funded from local rates (property taxes).[7] During the early period of rapid growth, from the 1850s to the 1880s, local politicians focused on balancing ratepayers' demands for low taxation with the

increasing costs of public health, education, and civic infrastructure.[8] West Ham's disagreeable and in many cases deadly environment eventually stimulated political change during the 1890s, as voters increasingly called for costly government interventions to ameliorate it. In West Ham, the failure of the political elite to respond facilitated the victories of labour and socialist politicians, and made the suburb a testing ground for interventionist public policies. West Ham was certainly not unique – unhealthy urban conditions prompted political change throughout England during the later nineteenth century.[9] However, it was an acute example, with the combined challenges of draining marshlands, heavy industrialization, serious social problems, and jurisdictional independence.

Greater London led a wider transition in Britain, which became significantly more urbanized during the nineteenth century, a development that contributed to dramatic social and political transformations. Cities were not simply the backdrops for social and political change.[10] The nature of urbanization was a major factor influencing the population's standard of living and health. Environmental conditions, urban morphology, and economic stratification played an increasingly important role in creating new social and cultural identities. This in turn shaped democratic politics as a series of franchise reforms, combined with mass migration to cities, transferred increasing power to the major centres.[11] By the end of the nineteenth century, new and effective demands for improved urban conditions arose from increased attention to widening environmental, public health, and social divisions between the best and worst districts of cities.

Environmental history, with its focus on both the ecological consequences of human activities and the social or cultural response to changing environmental conditions, provides an important approach to better understand the history of West Ham. Environmental historians go beyond chronicling increased pollution and ecological degradation to study the many ways in which humans relied on and were a part of the wider ecosystem.[12] After all, they were just as vulnerable as plants and wildlife to the effects of air pollution, and they contracted diseases transmitted by dirty water supplies.[13] In the British context, environmental history builds upon the excellent literature on the history of urban public health, which focuses on the negative health impact of poor environmental conditions in nineteenth-century cities.[14] Urban environmental history blends the methods and questions of urban social and medical history with a greater focus on the environment.[15] It provides a new lens to explore the many consequences of rapid urbanization in nineteenth-century Greater London.[16]

Population growth and industrialization caused a wide range of environmental problems throughout Greater London and other major British cities during the nineteenth century. Coal enabled urban development on an unprecedented scale, heating the homes and fuelling the steam engines that carried raw materials into the city and pumped the wastes away. It also powered Greater London's expanding industrial sector. The hundreds of thousands of coal fires filled the air with smoke, and human and industrial waste poured into the waterways and seeped into the land. The city spread outward, transforming its hinterlands as it did. Rural landscapes became sprawling residential neighbourhoods, crowded commercial centres, teeming docklands, expansive rail yards, and towering industrial districts.[17] Across Britain, cities and towns outgrew their urban infrastructure, and from the 1840s onward local governments struggled to find technological solutions and sufficient finances to remove human waste and other pollutants.[18] In many cases, cities failed to fully solve their drainage problems, and coal smoke pollution persisted in major centres through to the mid-twentieth century.[19]

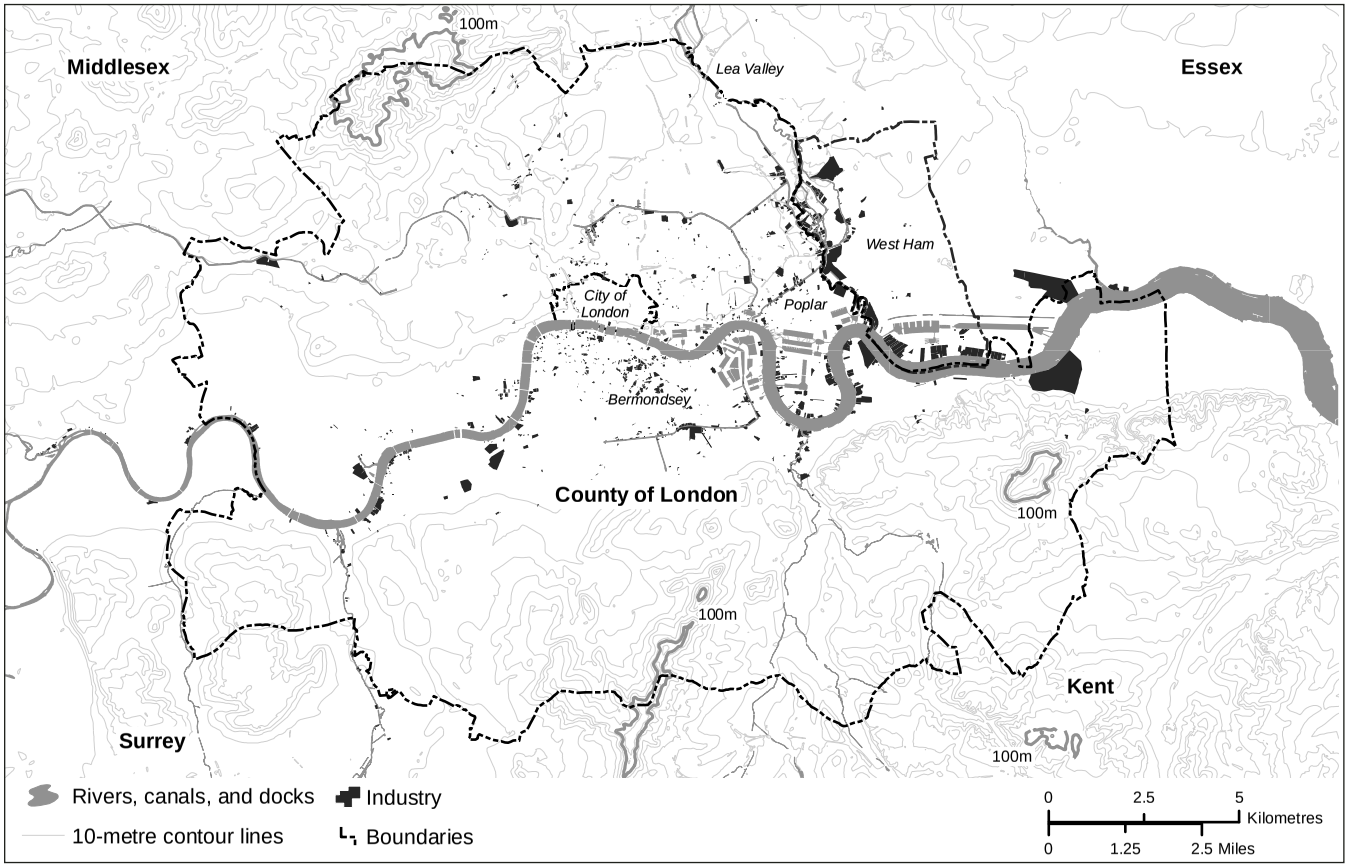
Although urban environmental problems were a collective challenge, Londoners did not equally share their negative consequences. The waterways, floodplains, and topography influenced the development of the built environment and the flow of pollution. The streams and rivers carried waste down to the Thames and east to the sea, though tides prolonged its circulation through the city. The prevailing winds also generally blew smoke and other air pollutants eastward, though inversions occasionally suspended the smog in place for days at a time. Hills protected the northwest and south of London from flooding, but the lowlands were regularly inundated by the Thames and the Lea. Not surprisingly, pleasant and green residential suburbs such as Hampstead and Wimbledon stood on higher ground, and dense and crowded housing for workers clustered around the docks and factories near the rivers.

Living with unhealthy environmental conditions was often a defining feature of social marginalization in Greater London during the nineteenth century. Residents of the eastern neighbourhoods experienced urban pollution most acutely. Poplar's Isle of Dogs and southern West Ham, for example, suffered from a combination of low topography, concentrations of heavy industry, and the influx of pollution from the rest of London. Just as Morley observed in 1857, poor environmental conditions correlated strongly with impoverished social conditions. Moreover, they produced an increasingly homogeneous social geography, as people with means

moved to more pleasant areas, and the economically vulnerable clustered in the industrial floodplain districts.[20]

Many people have written about London's remarkable growth and the resulting political, technological, social, and cultural changes, beginning with individuals who lived through the process themselves and continuing with generation after generation of historians.[21] However, this literature overwhelmingly focuses on the centre of the city and the older East End, paying lesser attention to the suburbs.[22] In addition, until recently, the literature downplayed the significance of industrialization. J.L. Hammond suggested in 1925 that the industrial revolution was "like a storm that passed over London and broke elsewhere."[23] Small workshops remained prominent in central London's manufacturing sector before and during the industrial revolution, leading historians to conclude that the revolution never really took root in the city. Furthermore, the old manufacturing core of London began to experience a protracted decline during the 1860s, suggesting the diminishing importance of industry in the capital.[24] A number of historians have challenged the perceived absence of the industrial revolution in London, and general histories now mention the industrial suburbs in passing, but Greater London's importance as a major nineteenth-century industrial city remains underappreciated.[25] Map 1 highlights the extensive industry that lay just outside of London and in South London, and shows the problem of focusing on the centre of the metropolis and the decline of particular industries. (This book relies on historical Geographic Information Systems [HGIS] maps; see the Appendix for a short overview of HGIS methods and the Map Credits section for source material used to create the database and maps.) This narrow perspective misses the "storm" of the industrialization that struck the Lower Lea Valley and the floodplains of the Thames Estuary during the second half of the nineteenth century.

Urban industrial development on the West Ham marshlands was part of a more general nineteenth-century process in which urban growth spread onto the lowlands of the Thames Estuary. Map 1 shows the extent of the low-lying parts of the estuary. During the nineteenth century, urban and suburban development increasingly encroached on low ground, including the marshlands and floodplains along the Rivers Thames and Lea. Docks were concentrated on the lowlands near the Thames, east of the City of London. Urban industrial development on floodplains transformed the environment and shaped the social geography of the metropolis. West Ham, Poplar, and Bermondsey were at the centre of this trend, with the



Map 1 London industry, 1893–95

major concentrations of factories and largest docks in the London region. This expansion facilitated economic development, but it also elevated the risk of natural disasters. These rivers proved difficult to constrain, particularly after the extensive reclamation of Greater London's floodplains, leading to regular and damaging flooding throughout the century. The Lower Lea Valley and the Thames Estuary provided an economically advantageous but unstable landscape for rapid industrial and residential development.

West Ham became a prominent industrial suburb due to the economic advantages afforded by the Lea and the Thames. The Lower Lea's braided "back rivers" and the Thames itself provided numerous waterways to supply factories with coal and other raw material.[26] Most factories required access to the rivers to transport raw materials, and the majority were built near the Thames, Lea, Wandle, and Ravensbourne or along one of London's canals. Map 1, which depicts all the factories identified on Ordnance Survey maps updated between 1893 and 1895, shows that the Lower Lea Valley and the land along the Thames in West Ham had emerged as the heart of London's industrial economy by the end of the century.

The Lea and the Thames provide a particularly useful lens to explore the changing relationship between nature and society in Greater London.[27] Major engineering projects transformed these urban rivers.[28] Cities relied on the rivers to supply drinking water, facilitate transportation, and carry sewage and storm water, and they became so polluted that they could no longer support most forms of aquatic life.[29] At the same time, Greater London's rivers often frustrated the efforts of engineers to control them. Extreme weather contracted or expanded their flow and threatened the city with either a shortage or an excess of water. The Thames, Lea, Wandle, Brent, and other rivers also defined the geography of Greater London and remained some of the most significant semi-natural features in the built environment. There are numerous popular and environmental histories of the Thames but significantly less material on the Rivers Lea, Ravensbourne, and Wandle.[30] Although they are significantly smaller than the Thames, they still played important roles in Greater London's development, supplying water, disposing of sewage, and enabling transportation. Significant clusters of factories were established along their banks, but only the Lower Lea, with numerous braided back rivers and extensive level marshlands, developed into a major industrial centre. Industry and population growth polluted all of London's rivers, and again, the Lower Lea was a particularly acute example.

During the late eighteenth and early nineteenth centuries, the purity of the River Lea had drawn calico cloth printers to West Ham. By the 1880s, however, little more than sewage effluent trickled down the Lower Lea during the warmest weeks of summer, and chemical factories stood on the former calico grounds along the riverbanks. The population outpaced the infrastructure in West Ham and other Lea Valley suburbs, with the result that raw or partially treated sewage regularly flowed into the river. During heavy rains, overflow valves dumped a mix of sewage and storm water from London's sewer system into the Lea, which simply intensified its long-term pollution. Public health officials and engineers increasingly recognized the dangers of contaminating the water supply with sewage effluent, an understanding that began with John Snow's 1854 identification of a Broad Street water pump as the main vector in the spread of cholera. Concern about contaminated water supply intensified in the 1880s with the discovery of the existence of germs. Moreover, sewage pollution was easily recognizable: the public could smell it and see the dark effluent oozing down the riverbeds of the Lea. Industrial expansion also played a significant role in polluting the Lea. Map 1 shows the concentration of factories on the alluvial floodplains of the Lower Lea Valley. Limited legislation and lax enforcement make it difficult to identify particular examples of industrial pollution, but there is no doubt that the heavy industry in the Lower Lea marshlands significantly degraded the environmental conditions of the valley. The increasingly polluted Lea, along with the industry that transformed its marshlands and the population that lived with regular flooding and unhealthy conditions, shaped both the environmental and social history of West Ham during the nineteenth century.

The first three chapters of this book explore the environmental consequences of rapid industrial and population growth in West Ham and the Lower Lea Valley. Chapter 1 uses a series of maps from the HGIS database to confirm the important role of environmental conditions in aiding and hindering industrialization in West Ham. The maps show the process of industrialization along the Lower Lea, and they also identify the limits of this expansion and the areas that remained open at the turn of the twentieth century. Chapters 2 and 3 also use HGIS maps to chart the rapid development of the built environment and to explore the ongoing connections between urban morphology, environmental decline, and social problems. The burgeoning population contributed to the environmental troubles, and the people, in turn, suffered the consequences of living in a polluted landscape. Population growth upriver from West Ham produced a series

of disasters, as new suburbs dumped their sewage into the Lea. Fractured jurisdiction in the Lea watershed, an ineffective legislative response, and scientific uncertainty meant that no comprehensive political or engineering solution to the sewage problem was applied until the twentieth century. Chapter 3 explores what it was like to live in West Ham during this period of dramatic and disrupting growth.

Chapters 4 to 6 focus on the social consequences of deteriorating environmental conditions at the height of suburban development in West Ham between 1890 and 1910. Chapter 4 begins with an analysis of the complex relationship between a prolonged drought, a major water shortage in East London and West Ham, the monopoly control of the water supply, and the first victory of a labour and socialist coalition in British municipal politics. The outcome of this election demonstrates that environmental analysis enables a fuller understanding of the shift from nineteenth-century liberalism to social democracy.

Chapters 5 and 6 explore the influential role of public officials, as residents demanded increased government intervention to resolve public health, economic, and environmental problems. The medical officer of health and the borough engineer used new powers and resources to improve both human health and the environment in the marshy portions of West Ham. The medical officer strove to balance popular assumptions regarding the cause of disease with the new scientific consensus that focused on germs. The borough engineer pushed the boundaries of local government further in an attempt to mitigate the endemic problems of flooding and unemployment.

As the public pressured politicians to address the tangled web of environmental and social challenges, including providing a constant flow of water, effective flood defences, solutions for unemployment, and healthier living conditions, the medical officer and the engineer gained new levels of managerial power. Over time, they were tasked with administering, regulating, and inspecting the growing array of government interventions in West Ham.

However, these interventions did little to alleviate the ecological damage to London's second river, whose long-term devastation epitomizes the environmental consequences of urban industrial development. Londoners and their governments privileged diverting water, dumping sewage, and reclaiming wetlands for industry and housing over the well-being of rivers and marshlands.[31] In West Ham, industrialists took advantage of the abundance of waterways and converted wetlands into a heavily industrialized landscape. The larger factories facing the Thames mostly continued