PHOTO ESSAY

The Urban Periphery and the Rural Fringe: West Ham’s Hybrid Landscape
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West Ham, on the eastern edge of London, was the site of an industrial boom during the second half of the nineteenth century.¹ The intersection of the industrial built environment with the receding countryside created a hybrid landscape; green spaces and natural rivers survived alongside chemical factories, docks, gasworks and slums.² West Ham was a mosaic of new urban-industrial spaces, the older agricultural landscape, and the older still estuarine wetlands. Photographs are useful sources to understand the environmental and social problems of this new suburb on the edge of London at the turn of the twentieth century. They provide insight into the environmental condition of an estuarine wetland, as it became an industrial centre and show the inhospitable space in which a large number of people lived nonetheless. The images in this essay help demonstrate the centrality of rivers and wetlands in West Ham’s landscape and their significance in the suburb’s economic and social development. The last two photographs in the essay bring people into the scene and suggest that humans, along with nature, suffered because of the increasingly degraded local environment. Using photographs, a map, and a painting, this photo essay will demonstrate the combined importance of the natural geography and human intervention in creating West Ham’s hybrid landscape at the turn of the twentieth century.

A thumbnail sketch of West Ham’s political and social history at the turn of the twentieth century provides a further context in which to understand the area’s development into a hybrid suburban landscape. By the second half of the nineteenth century, West Ham was an attractive location for building noxious industries and large-scale energy intensive factories. The suburb’s economic advantages came from two factors: its jurisdictional independence from London’s Metropolitan Board of Works’ (MBW), which began regulating noxious industries in 1855, and the completion of the Victoria Dock in the same year, which combined with the efficient natural water transportation network to significantly reduce the cost of coal.³ After two decades of steady expansion, West Ham began a period of explosive growth between 1871 and 1901 when the population increased from 62,919 to 267,358.⁴ Not surprisingly, the resulting suburb suffered from the interconnected problems of environmental and social degradation.

West Ham was a peripheral space between the city and the countryside. In 1900, urbanization remained incomplete despite the influx of over a quarter of

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Figure 1. Channelsea River, south of Abbey Mills 1900.

Figure 2. View of the River Lea Bridge and Stratford Viaduct as now constructing for the Eastern Counties Railway.
a million people in the previous century. Rural Essex retained a foothold in the suburb, through a few lingering pockets of agriculture, and in the large sections of open marshlands that survived the urban onslaught. West Ham’s location, downwind from London and on the floodplains of the Rivers Lea and Thames, along with the growing concentration of unpleasant factories, limited its appeal as a location for a prosperous commuter suburb. Consequently, the marshlands gave way to suburban slums, as only labourers, who needed to be close to their work, and the impoverished, lived in the low-lying south of the borough. The environmental disadvantages of the location worsened the social squalor as people suffered from the flooding and pollution that plagued West Ham.

The photograph in Figure 1 of the Channelsea River in 1900 exemplifies the devastation inflicted on the environment around the Lower Lea River network. The photograph, taken from the Northern Outfall sewer, looks south across a cluster of chemical factories (left), a major gasworks in the distance (centre) and an undeveloped meadow called the Mill Meads (right). A hundred years before the photograph was taken this landscape was a mostly rural and relatively uncontaminated wetland. By the time of the photograph, factories lined the banks of the Channelsea and the industrial economy had pressed the stream into service to transport coal and other raw materials. Figure 1 also demonstrates the close proximity between the open meadow on the western bank of the river and the chemical factories and gasworks. Mill Meads remained a site of food production throughout the industrial boom, transitioning from farmland to allotment gardens early in the twentieth century. Even at the height of urban growth and environmental ruin, pockets of agriculture and undeveloped wetlands survived in contrast to the new industrial landscape.

The print in Figure 2 of George Harley’s painting of the Stratford Marsh and the Lea from 1837 provides an interesting contrast to the photograph of the Channelsea River (Figure 1) taken six decades later. This was a painting of the proposed railway crossing over the River Lea, two years before the line was built. The trains, along with the prominent smokestack, show the promised growth of industry in the area, but the otherwise pastoral vista and the two men fishing in the foreground suggest it was still a predominantly rural landscape. The representation of West Ham from the late 1830s in Figure 2 provides some indication of just how fast the urban boom transformed this peripheral space into a major industrial centre at the end of the nineteenth century. Comparing this pleasant depiction of the river to the photographs from around 1900 found in this essay provides visual evidence of the significant environmental damage created by this rapid growth.

Maps and photographs provide an important glimpse of the condition of West Ham during the height of its growth. The Ordnance Survey produced maps of the area in 1893 and 1894. These maps record the various land uses in the borough and show the significant urban growth since the first set of maps was pro-
Figure 3. GIS Map of West Ham in 1893 and 1894.12
duced in 1867. Along with these maps, there is a small collection of photographs of the River Lea and West Ham from around the year 1900. Many of these images were likely captured using the new hand-camera, which transformed photography beginning in the 1880s. Lynda Nead explains: “The Expressed goal of the hand-camera photographer was the unstudied, or unposed, qualities of everyday life.” These photographs are fragments, as we know little about why they were taken or why they were saved and they do not create anything close to a complete record of West Ham at the turn of the twentieth century. However, when examined alongside the more comprehensive Ordinance Survey Maps the photographs are useful sources to show the environmental condition of the river and the suburb.

The map in Figure 3, based on the Ordinance Survey Maps from 1893 and 1894, created using GIS software, shows some of the different land uses in the borough at this time. Among other things, the map shows the many rivers, streams and undeveloped wetlands that remained in West Ham after decades of industrial and urban development. The Lea’s continued existence was significant, as urban growth forced most of Greater London’s other small rivers underground. The Lea split into half a dozen smaller streams, or back rivers, just north of Stratford which rejoined again at Three Mills Island. Most of the back rivers were tidal, taking water upstream from the much larger River Thames during the twice-daily flood tides, significantly transforming the landscape in the process. During the ebb tides, many of the back rivers lost most of their water leaving large amounts of mud exposed, as seen in the first photograph of the Channelsea River (Figure 1). Locks controlled a few sections of the Lower Lea, transforming them into canals, and blocking the tides to maintain a more consistent water level for shipping. Over time engineers continued to manage and transform the River Lea, making it something between a natural river and an artificial canal. Along with this river network, the massive Royal Docks dominated the south of the borough, adding a significant artificial body of water.

The marriage of coal and the water network together created West Ham’s hybrid landscape. The coal barges in Figure 4, a photograph of Ingham Clarke & Co, show the river at work supplying the varnish factory and gasworks with their essential energy supply. The rivers created a micro-economic-climate that allowed this industrial suburb to expand during a time when London’s industrial economy was in decline. The wetlands east of the River Lea were significantly less expensive than property in central London. More importantly, the river network kept down the cost of transporting coal, making it possible for West Ham’s new factories to compete with industry located closer to the coalfields in the north. This economic advantage only existed for factories located on the river, which explains the pattern of industrial development that closely matched the natural geography of the Lower Lea Valley. Figure 4 shows how sections of the Lea’s Back Rivers became a part of the industrial landscape, as important to the new economy as the smokestacks in the background.
**Figure 4.** Abbey Mills Ingham Clarke & Co Bromley Gas Works 1902.

**Figure 5.** Three Mills Wall London Fireworks, Co 1900.
Despite the advantages of doing so, building factories and homes on the wetlands of the Lower Lea Valley and the Thames Estuary also caused problems. Much of the southern half of West Ham was below the high water mark of the Thames and periodically the limited flood defences failed, causing significant damage to the built environment. The threat of flooding was a constant reminder that the new suburban landscape lacked stability. The River Lea, by repeatedly reclaiming its historic floodplains, regularly inverted its relationship with humanity by taking control of the built environment. The extensive water network combined with a dense industrial economy, made West Ham a unique hybridized landscape, where nature preserved a role in shaping the suburban environment.

The photograph in Figure 5, of the London Fireworks Co., together with the GIS map in Figure 3 demonstrates the proximity of factories and streams near the High Street in Stratford’s industrial zone. The building in the right of the photograph blurred the line between the industrial zone and the river, as it extended beyond the shoreline and out into the Three Mills Wall River. Stratford’s industrial zone was one of the most intensively hybridized spaces, with factories, rivers, homes and wetlands coexisting in a densely urban area. Figure 5 shows the factories and rivers, while the 1893 Ordnance Survey Map demonstrates many other land uses in the immediate area. Behind the building in the left of the photograph were dozens of small homes located only a few hundred feet from this river. Along the length of the western bank of the river (right), there were a mix of small factories, including a cooperage and a number of chemical dye factories. The path in the centre of the photograph led down the eastern bank of the river to the pastures and allotment gardens on the Mill Meads.

The massive shipyard in Figure 6 demonstrates the correlation between river size and factory size in West Ham. The Stratford industrial zone, built along the banks of small tidal streams, supported mostly small factories. In contrast, the Thames supported a smaller number of much larger factories. Locations on the Thames allowed many of these factories to have their own wharfs, further reducing the cost of shipping raw materials. Figure 5 shows the largest of the Thames front industries: the Thames Ironworks. This was a major shipbuilding yard that surrounded the mouth of the Lea and was located in both London and West Ham. The photograph recorded the launching of the HMS Duncan battleship. The shipyard rose to prominence in the second half of the nineteenth century, and it was a leading shipbuilder at the turn of the twentieth century. Its standing began to decline in the first decade of the new century and in 1912 it succumbed to competition from the northern shipbuilding industry. At its height, Thames Ironworks employed 6000 people, second only to the GER rail works in Stratford, which employed up to 7000. Other factories in Silvertown included sugar refineries, fertilizer plants, a telegraph cable factory and other chemical works. Like other parts of West Ham, there were pockets of housing and undeveloped land in Silvertown, but large-scale industry and the Victoria Docks dominated the land-
**Figure 6.** HMS Duncan ready for launching March 1901.

![HMS Duncan ready for launching March 1901.]

Reprinted with permission from Newham Local Studies Library and Archive, Newham, Greater London.

**Figure 7.** Stratford Broadway 1899—1905.

![Stratford Broadway 1899—1905.]

Reprinted with permission from Newham Local Studies Library and Archive, Newham, Greater London.
scape, making it less of a hybrid than then the rest of the suburb.

The GIS map and some of the photographs in this essay demonstrate the correlation between the natural landscape and urban development. We have already seen that factories clustered alongside rivers and streams. The natural landscape also shaped the social geography of West Ham, with the worst of the slums located on the former marshlands in the south and west of the borough (these included western Stratford, Plaistow, Canning Town and Silvertown). The land gained elevation away from the rivers in the northeast of the suburb towards Epping Forest. A more prosperous suburb, called Forest Gate, developed on this higher ground. Notice on the map in Figure 3 how the unplanned web of streets in Canning Town contrasts with their more orderly and spacious arrangement in Forest Gate. The different natural and social geography in turn shaped the politics of West Ham, with a concentration of socialist support in the south and a more conventional mix of liberals and conservatives in the north. In this way, the natural, social, and political landscapes of West Ham overlapped in dialectic relationships.

Thus far, we have examined photographs and a map that show how humans transformed the environment of West Ham and how nature helped shape the built environment of the suburb. The remaining two photographs in this essay show people within this urban environment, allowing us to briefly consider the unique hybrid landscape’s role in human lives and in the society of the borough. The social history of the Lower Lea is intertwined with its environmental history: population growth added to the many environmental problems and at the same time the people living in West Ham suffered from the growing problem of pollution. The photograph of Stratford in Figure 7 demonstrates the constant flow of people, animals, and goods through the suburb’s streets.

People lived, worked and played in the dirty landscape. Pollution seeped through the suburb, invading the homes, shops, factories, parks, and even the bodies of the people. Air quality, which appears to be very poor in the hazy photograph in Figure 7 was a major problem caused by the combination of London’s pollution carried to West Ham by the prevailing winds and the significant coal and chemical smoke produced locally. The Outer London Inquiry reported that the Coal Smoke Abatement Society sent 1660 complaints to the Borough Council between 1901 and 1906. Along with the smoke, residents also suffered from the terrible smells given off by some of the chemical factories, many of which used rotting animal by-products, and from some of the increasingly polluted back rivers. A local conservative newspaper, the *West Ham Guardian*, condemned the smells in a 7 January 1899, editorial: “Offensive smells are far too prevalent in various parts of West Ham and it is high time the Council authorities commenced a crusade against the offending parties”. Pollution was an added dimension to West Ham’s hybrid industrial landscape at the turn of the twentieth century. It negatively affected both the built environment and the remaining undeveloped lands.
Despite the many disadvantages it held, the suburb’s landscape at the turn of the century also held some positive aspects for the local population. The hybrid landscape created opportunities for recreation. The abundance of undeveloped land allowed for the growth of allotment gardens and the building of new recreation grounds in the first decades of the twentieth century. Factory owners supported some of the gardens with land grants and the chairman of the Thames Ironworks, Arnold Hill, built one of the new recreation grounds. The River Lea was also a site for recreation and there remained enough fish to support angling late in the nineteenth century. To a limited extent, these beneficial aspects of the hybrid landscape helped mitigate some of the social and environmental problems in the suburb.

The final photograph, simply labelled “Unknown Boy Fishing,” (Figure 8) is a problematic source, as it provides very little information about where or when the image was taken. That said, I believe it is a very powerful photograph because it links people with the river. Despite the influx of noxious industries to the wetlands of the Lower Lea during the second half of the nineteenth century, the river remained a site of amusement and even a place to catch food. Unlike the painting with two men fishing from the 1830s, this boy was not on a pleasant rural riverbank, but instead within an urban space, surrounded by dark buildings and a
bridge. While the two anglers from earlier in the century were the only people in the painting, the boy and his friend, had a crowd of onlookers watching from the bridge. The photograph represents an entirely new sense of place, showing a significant transformation in the Lea and the relationships between people and the river after decades of urban growth. This photograph again demonstrates the hybrid spaces in which people lived, as the built environment crowded around the natural river and the new urban population interacted with the river's wildlife.

Taken together, the map and photographs of West Ham show a hybrid landscape created by intensive industrial development and shaped, aided, and hindered by a waterlogged natural geography. The nature of the rivers changed as structures crowded their banks and human and industrial wastes fouled their water and mud, but they continued playing an active role in supporting and damaging the new built environment and local economy. Population density and industry degraded the environment and threatened the health of both the ecosystem and the human population. The geographic, economic and environmental conditions in West Ham set it apart from both London’s declining industrial core and the expanding commuter suburbs in other parts of Outer London. Close attention to the unique geography and environment of West Ham provides a new foundation to re-examine the history of rapid urban growth on the eastern edge of London.

NOTES


2 For a discussion of the growing importance of hybrid landscapes in environmental history see Richard White “From Wilderness to Landscapes: The Cultural Turn in Environmental History,” The Historian 66, no. 3 (September 2004): 564.

3 The combined factors of jurisdicational independence and an efficient river transportation system were identified in the early works on West Ham’s growth. Crouch identified the importance of a mechanical coal cranes in “cheapening seaborne coal” and making “it possible for Silvertown factories to contend successfully” with industry in the north. Archer Philip Crouch, Silvertown and Neighbourhood (London: Thomas Burleigh, 1900), 64. Howarth and Wilson noted the significance of the 1855 Nuisances Removal Act. Edward G. Howarth and Mona Wilson, West Ham. A study in social and industrial problems: being the report of the Outer London Inquiry Committee (London: J. M. Dent & Co., 1907), 145-146. Marriott provides a detailed analysis of the significance of both factors and argues that the low cost of coal, facilitated by the rivers, was ultimately more important than jurisdictional independence. John Marriott, “West Ham: London’s Industrial Centre and Gateway to the World” I: Industrialisation, 1840-1910,” London Journal 12, no. 2 (1988): 124-126. Marriott revisits this in “Smokestack,” 20-25.


6 The population of the Parish of West Ham (roughly equivalent to the later borough) in 1801 was only 6485. “West Ham AP/CP: Total Population,” http://wwwVISIONOFBRITAIN.ORG.UK/DATA_CUBE_CHART_PAGE.jsp?DATA_THEME=TPOP&DATA_CUBE=N_TPpop&U_ID=10241388&C_ID=10001043&ADD=N (accessed: 23 July 2008). The economy was predominantly agricultural with some limited industry harnessing the tides along the riverbanks. For more information on the economic and agricultural history of West Ham see W. R. Powell, A History of the County of Essex: Volume 6 (1973), http://www.british-history.ac.uk/source.aspx?pubid=283 (accessed: 18 July 2008). Finally, we know River Lea and its back rivers were still pure during the first half of the nineteenth century, as they sustained Calico and silk printing industries. Ironically, this industry was an early contributor to the urbanisation that began polluting the streams and forced the printers to leave the area in the middle of the century. W. A. Parks, “The Development of the Heavy Chemical Industry of West Ham and District” (Master’s thesis, University of London, 1949), 13-16.


8 George Harley (painter) and Rudolph Ackermann (engraver) “View of the River Lea Bridge and Stratford Viaduct as now constructing for the Eastern Counties Railway”, lithograph, 1837.

9 Marriott identifies the building of the railway in 1839 as the starting point of the industrial transformation of West Ham. Marriott, “West Ham”: 126-129.

10 Presumably, railroad developers commissioned this painting (Figure 2) which limits its authenticity as a true representation of the landscape of the 1830s. It appears to suggest the rural landscape would not be overly disrupted by railway development and that the Lea would remain a pleasant fishing place. However, when situated alongside other forms of evidence, we can confirm the general impression the painting gives: West Ham was still a predominantly rural landscape in the late 1830s. We know the population of the Parish of West Ham was still very small, growing from 11,580 in 1831 to 12,738 in 1841. “West Ham AP/CP: Total Population,” http://wwwVISIONOFBRITAIN.ORG.UK/DATA_CUBE_CHART_PAGE.jsp?DATA_THEME=TPOP&DATA_CUBE=N_TPpop&U_ID=10241388&C_ID=10001043&ADD=N (accessed: 18 July 2008). The 1867 and 1893 maps of Stratford demonstrate that the area depicted in the painting, north of the Great Eastern Colchester Railway, remained undeveloped until the late nineteenth century, “Stratford, 1867” and “Stratford, 1893”, Old Ordnance Survey Maps, The Godfrey Edition.


12 This is a GIS representation of vector layers I created by tracing copies of the Old

The photograph (Figure 5) labelled “Three Mills Wall London Fireworks, Co 1900” shows one of the back rivers at a high tide; notice the water is near the top of the wall (left of photograph).

The Ordinance Survey Maps show a Tide Lock to the south of Three Mills Island that divided the Old Lea from Bow Creek, separating one or two of the western streams from the tides and linking them to the Limehouse Cut canal.

Human intervention in the Lea’s functioning included drawing large amounts of water out to supply East London and the eastern suburbs, converting natural streams into canals, and building flood defences.

I believe this photograph is labelled incorrectly. Careful examination of the map leads me to believe this photograph is of the Channelsea River north of the West Ham Gas Works located off Abbey Lane, not the Bromley Gas Works located south of Three Mill Island. Powell briefly mentions the Ingham and Clarke varnish factory located on Abbey Lane. Powell, “Industry,” http://www.british-history.ac.uk/report.aspx?compid=42755 (accessed 1 August 2008).


Coal was transported by sea to the Victoria Dock where it was loaded by hydraulic machinery into the barges seen the in Ingram & Clark photograph (Figure 4). So long as the factories were located on a nearby waterway they could take advantage of this efficient method of transporting coal, reducing their coal costs in comparison to the costs incurred by factories that needed to transport coal overland. See note two and Marriott, “West Ham”: 124-126.

Flooding was a regular problem in West Ham, with major floods occurring in 1888, 1897, and 1928.

The exception to this trend was West Ham’s largest employer, the Great Eastern Locomotive Works on the northern edge of Stratford.


Fink provides a detailed analysis of West Ham’s politics in the late nineteenth century in “The Forward March,” 279-321.

Christen Rosen and Joel Tarr outline four dimensions in the study of urban environments in “The Importance of an Urban Perspective in Environmental History,” Journal of Urban History 20, no. 3, (May 1993): 301. In this short photo essay I attempt to deal with three of the four dimensions. The first two are the “analysis of the effects of cities on the natural environment over time” and the “analysis of the impact of the natural environment on cities”. The third, which I will not address in this essay, is “the
study of societal response to these impacts and efforts to alleviate environmental problems”. The final dimension is the “examination of the built environment and its role and place in human life as part of the physical context in which society evolves.” I believe that for West Ham it is important to examine the role of the built environment (factories, canals, gardens and slums) and the surviving natural environment (streams and wetlands) in providing the physical setting for the society, though I will only address this briefly in this photo essay.

25 Howarth and Wilson, 147. Also see West Ham Guardian, 29 November 1898 for a discussion of the constant problem of smoke and fog in West Ham.

26 For offensive smells, see the editorial in West Ham Guardian, 7 January 1899. For river pollution see West Ham Guardian, 4 September 1898 and The Herald and South Essex Gazette, 24 September 1898 for reports on the Local Government Board investigation of the “serious nuisance arising from the state of the Channelsea.”

27 The Ordinance Survey Maps from 1915 show a significant increase in allotment gardens. The relative abundance of open space set West Ham apart from the older East End. For a discussion of the problems of density in London’s East End and the clearing of graveyards to create small pockets of green space, see Peter Thorsheim, “Green Space and Class in Imperial London,” The Nature of Cities, ed. A. Isenberg (Rochester: University of Rochester Press, 2006).

28 James Bushnell recounted that his father was given an allotment plot by his employer, the Bromley Gas Works. SN: 2000, Oral interview Transcript #302 in P. Thompson and T. Lummis, Family Life and Work Experience Before 1918, 1870-1973 [computer file]. 5th ed. (Colchester, Essex: UK Data Archive, April 2005). In addition, the Landgrabbers, led by Ben Cunningham, took over public land for a garden and pointed out that companies in West Ham were supporting the unemployed with allotment gardens while the borough left productive land unused: “The Unemployed Latest Move” South Essex Mail (14 July 1906); and South Essex Mail (28 July 1906). John Simkin, “West Ham United: 1896-1897,” http://www.spartacus.schoolnet.co.uk/WHhistory2.htm (accessed 19 August 2008).

29 During a water famine in 1898 a special correspondent for The Times of London reported that local angling clubs approached the East London Water Company to request permission to net the depleted water reservoirs to harvest the fish before they were killed by lack of water. This was north of West Ham, but the photograph (Figure 8) shows that children continued to fish in the heart of the suburb. The Times of London (26 August 1898).