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The Value of a Mobilities Lens in Studying the Water-Heritage Nexus

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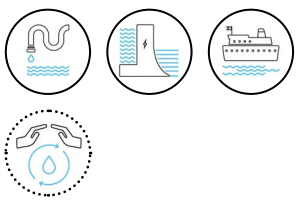
This article explores the value of a mobilities lens in studying the nexus of water and heritage, specifically within the context of post-industrial rivers and the many regenerative and degenerative processes shaping them today. The River Lea (East London) showcases the complex, often conflicting, water-heritage dynamics that manifest across post-industrial riverscapes: efforts to (re)connect communities to rivers and their heritage become entangled with the (pollutive) imprints of industry. Using examples from the River Lea, the article highlights how a mobilities lens, currently underused in water-heritage studies, draws attention to (i) physical accessibility provisions surrounding rivers, (ii) (in)visible streams of fluid materials and (iii) the movements and moorings of more-than-human entities. These human, ecological and more-than-human mobilities can support but also sabotage efforts to regenerate post-industrial rivers, rendering a mobilities lens, with its ability to value and make visible multiple mobilities, indispensable to studying post-industrial rivers as key water-heritage sites.

Keywords: *post-industrial rivers, mobility, environmental degradation, regeneration, River Lea*

KEY THEMES



< Fig. 1 Close-up view: Oil spill in the Lea (Source: Maia Brons, 2023).

Introduction

Rivers in post-industrial landscapes, or post-industrial rivers, constitute key sites in studying the nexus of water and heritage. In Europe especially, many rivers resemble exhibitions of the industrial period, connecting past to present through remnants of historical buildings, technological water systems and industry-induced environmental degradation (Mah 2010). Post-industrial rivers also increasingly undergo extensive regeneration schemes aimed at reviving ecosystems, restoring historical infrastructures and reintegrating riversides into surrounding urban landscapes (Hein 2016). Such interventions cause complex synergies and frictions between heritage- and environment-oriented goals, the stakes of which increase as climate change further intensifies (Corten 2023).

Researchers have made considerable progress in scrutinizing river regeneration initiatives, especially regarding how they engage with the water-heritage nexus, local communities and concerns for justice and sustainability (Goh 2021). Recently, studies of this kind increasingly foreground questions of mobility: how spaces are (differentially) accessed and experienced. Indeed, creating inclusive and sustainable opportunities for people to (re)connect with rivers and their historical and natural heritage implies understanding the parameters of moving to and through those riverscapes (Rhoden and Kaaristo 2020; Usher et al. 2021). Kaaristo and colleagues (2020), for example, use mobilities theory to analyze emerging patterns of co-existence, collaboration and conflict between different canal users (e.g., boaters, pedestrians, cyclists) as Britain's historical canal network becomes gradually reintegrated into urban landscapes. This article further explores the value of a mobilities lens in studying the water-heritage nexus, specifically within the context of post-industrial rivers and their regenerative and degenerative processes. This watery backdrop elicits an approach to mobility that is, from the outset, fluid and flexible: a spectrum ranging from movement to immobility, visible to invisible and human to more-than-human (Boas et al. 2022).

The article uses examples from the River Lea in the Lower Lea Valley (East London). Between the eighteenth and nineteenth centuries, the Lower Lea Valley constituted "the heart of London's industrial economy" (Clifford 2017, 10). Although Britain's industrial period ended, it left its environmental imprint on the River Lea, which became reputed as one of Britain's most polluted rivers and, void of its industrial import, gradually disappeared from public memory. After more than 50 years of neglect, the 2012 Olympic Games brought unprecedented investment to the area, reintroducing the Lea as a "tear in London's urban fabric" that required stitching (Design for London 2013, 7). Since then, the Lower Lea Valley has undergone many regeneration initiatives bearing varying, sometimes conflicting, strategies to unlock its cultural and natural potential and reinstate it as a key water-heritage site. Yet, advancements in making the Lea attractive and accessible are continuously thwarted by political, infrastructural and environmental challenges. It is on this intricate interface of regeneration and degradation, water and heritage, that a mobilities lens may shed some light.

Human Mobility for Social River Connectivity

The first, perhaps most straightforward, value of a mobilities lens lies in its ability to assess basic human mobility to and through riverscapes: the extent to which riversides are physically accessible and attractive. This argument builds on Kondolf and Pinto's (2017) theorization of "social connectivity," which implies the inter-

^ Fig. 2 Volunteers conducting a bird survey along the Lea (Source: Maia Brons, 2022).

actions between rivers, on the one hand, and humans (including cultural and social systems, knowledge and goods) on the other. Social connectivity, Kondolf and Pinto (2017) argue, is mediated by physical infrastructures and conditions along, within and surrounding rivers, also known respectively as longitudinal, vertical and lateral connectivity. Projects aiming to regenerate rivers commonly prioritize ecological objectives, which, critically, results in underdeveloped agendas regarding socio-spatial concerns (Usher et al. 2021). This sustains an underappreciation for basic human mobility needs and the role of spatial infrastructures in influencing how people experience, or are differentially excluded from, post-industrial riverscapes.

The Lower Lea Valley demonstrates how physical mobility provisions can both support and strain social connectivity between humans and rivers and, more broadly, interventions designed to optimize post-industrial rivers' water-heritage offerings. Among the numerous initiatives targeted at regenerating the River Lea is Cody Dock: an organization aiming to reconnect local communities with the river through volunteering and educational activities. Through Cody Dock, hundreds of community members have gained embodied experiences with the Lea, becoming (re)acquainted with its historical and ecological resources, for instance through weekly biodiversity surveys. Here, people move attentively along the river (fig. 2), observing local wildlife and landscape changes and collecting data for a growing citizen-led database (Gasworks Dock Partnership 2022). As illustrated in Dunkley's

^ Fig. 3 Flooded footpath between Abbey Mill Pumping Station and the Lea (Source: Maia Brons, 2023).

(2018) study of woodland- and river-based citizen science projects, such activities have the potential to mobilize people to cultivate physical, social and emotional connections with rivers and their natural heritage, thereby laying the foundation for community-based river custodianship. Furthermore, in the case of the Lower Lea Valley, by engaging with, and rendering visible, local biodiversity – from kingfishers to bat colonies – participants contribute to the wider movement of challenging the longstanding reputation of post-industrial rivers as ecologically depleted (Read 2017).

A mobilities lens draws attention to the Lea's lateral connectivity conditions, specifically the physical accessibility and aesthetic provisions surrounding the Lea that could facilitate or forestall such interactions between people, water and heritage. Indeed, without the clean and cared-for river path, the riverside would remain inaccessible and under-appreciated, leaving the effects of said activities socially and spatially insular. This perspective also emphasizes the contradiction that while mobility alongside the river has improved considerably, mobility toward it has not. The area surrounding the Lea comprises a vast industrial estate with little public transport and even less residential activity. It also constitutes the administrative border between several boroughs, which dilutes environmental responsibility and oversight (Restemeyer et al. 2019). Consequently, the area attracts a great deal of anti-social behavior and remains

a derelict patchwork of "inactive streets, […] disconnected developments and ad hoc industrial sites" (Verdini and Dean 2022, 256–57). These conditions chronically sever the Lea from everyday urban life, resulting in many local residents remaining unaware of its existence.

Other (water-related) physical conditions further obstruct human engagement with the river. For example, because local drainage systems are outdated, parts of the riverside flood during heavy weather. This includes the footpath (fig. 3) between the Lea and the Victorian-era Abbey Mill Pumping Station, which once was a centerpiece in London's wastewater treatment system.

The pumping station represents a principal aspect of the Lea's industrial legacy, namely its designation as a sink and sacrifice zone for London's most undesirable and harmful substances, from industrial pollutants to sewage. Physically engaging with sites like these is essential for people to learn about the Lower Lea Valley's industrial heritage – which underpins many of its contemporary environmental issues – but is undermined by dilapidated walkways and water systems. This signals a paradox between, on the one hand, the professed aspirations of local authorities to restore the Lea's cultural and historical significance (Tower Hamlets n.d.) and, on the other, the protracted negligence of basic mobility provisions.

(In)Visible Currents and Canalization

A second value of a mobilities lens emerges when considering Sodero's (2022) "ecological approach to mobilities," which draws attention to how the mobilities of non-human entities mediate the (mobile) relationships between humans and their surroundings. For example, the movements of weather and water, or the immobility of built infrastructures, can shape the course and condition of rivers and, therewith, the extent to which people can (re)connect with riverine nature and history.

The Lower Lea Valley offers helpful examples. The commendable recent environmental and accessibility improvements along the Lea have occasionally been thwarted by environmental incidents, ranging from chemical leaks to sewage releases (e.g., Laville 2020). An assessment of the causes and costs of these persistent pollution problems remains incomplete without considering the movements, the streams and stagnations, of water itself. Surrounding the Lea is a patchwork of pipes, valves and outfalls which, originating in the Victorian era (roughly 1820–1914), have gradually become saturated with spontaneous, leaky and illegally altered connections. The area's chronic responsibility vacuum further convolutes what is now a largely unmapped and unregulated water network (Bussi et al. 2022). This exposes the river to both "accidental" deposits of harmful sediments, when rainwater washes sediments from surrounding industrial estates and feeds into the Lea, and intentional, illegally dumped toxic substances. Invisible materials, such as tire dust, can have striking and severe impacts on the river's water and ecosystems (Patroncini, Veronesi and Rawson 2014; fig. 4) as can more visible, visceral incidents like mass oil dumps (fig. 5). Either way, (in)visible currents of toxic substances, mobilized by streaming water through unsolicited networks, can mean the difference between a river that is healthy or hazardous for human interaction.

The (im)mobility of the river itself also dictates how people can engage with it and its natural heritage, which remains an underexplored aspect of qualitative urban river research (Kondolf and Pinto 2017). The Lower Lea Valley was originally a marshland in which the Lea moved unrestrainedly with the tides. Its subsequent role as

^ Fig. 4 Algae bloom in the Lea (Source: Maia Brons, 2022).

^ Fig. 5 Oil spill in the Lea (Source: Maia Brons, 2023).

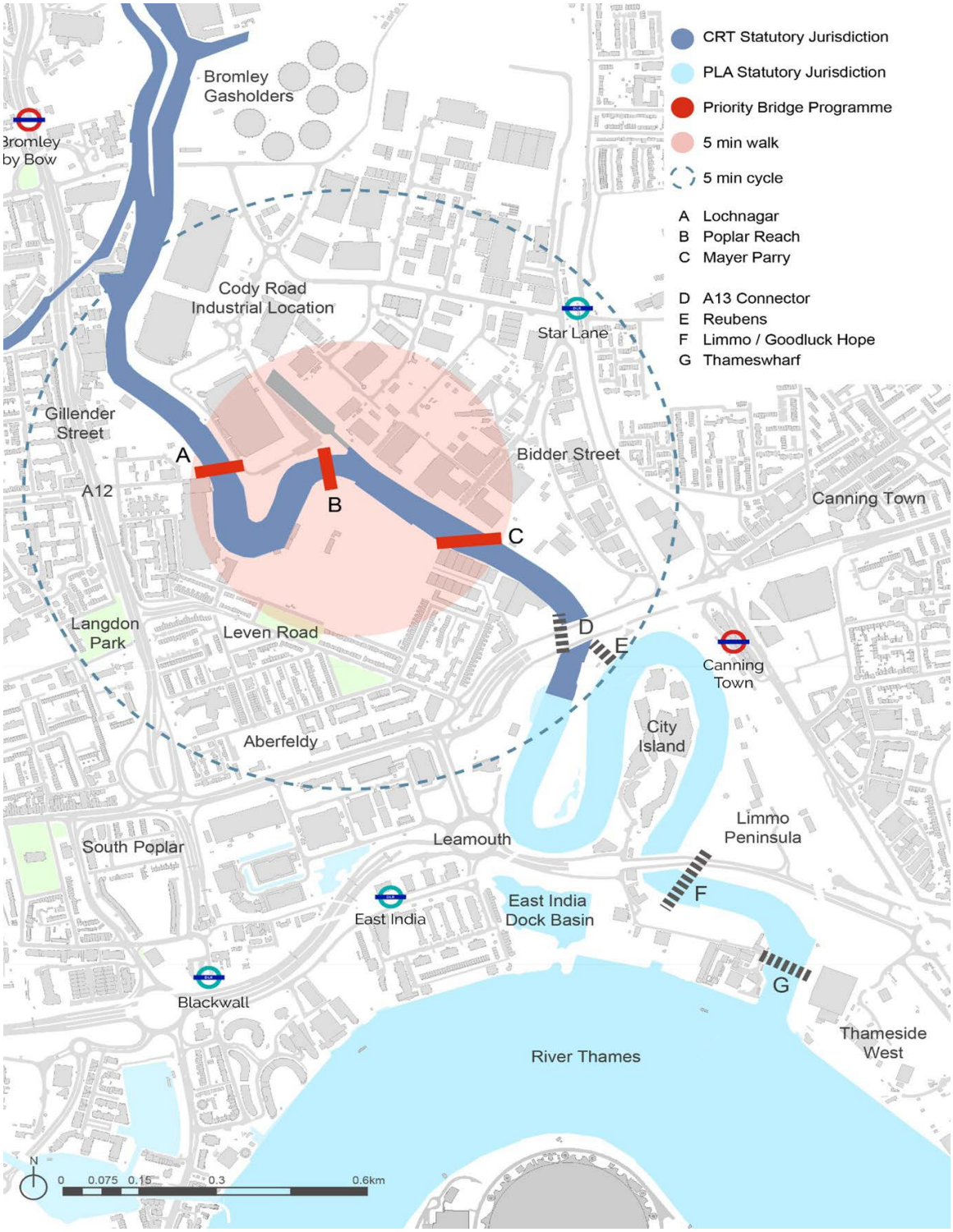
an industrial artery prompted extensive efforts to control, canalize and capitalize on the river (Clifford 2017). An ecological mobilities lens highlights how, a far cry from its original state, today's lower Lea largely remains contained (i.e., immobilized) by its industrial legacy: its banks consist mostly of high impermeable walls; its flow remains dictated by an expansive labyrinth of water-control technologies (Read 2017). On the one hand, these immobilization mechanisms enable human movement around the river and human connectivity with it. The sluices and weirs somewhat stabilize the tidal (highly changeable) river water levels which, together with the hard-surfaced riversides, improve general human accessibility – especially for less mobile people. These human-made provisions also particularly improve conditions for narrow boats to moor along the river. In the Lower Lea Valley this has led to the emergence of several (semi-permanent) boating communities, which, occupying the liminal space between mobility and immobility (Kaaristo et al. 2020), often play important roles in safeguarding local water heritage and strengthening social river connectivity (Read 2017).

Conversely, the Lea's ecological immobilization also imposes mobility (and therewith social and cultural) restrictions on people seeking to (re) connect with the river. As discussed, the water infrastructures surrounding the Lea are undermaintained and unfit-for-purpose, especially considering the increasing volumes of water as urbanization and climate change intensify. The gradual expansion of water-control technologies and impermeable riverbanks has further reduced natural floodplain environments (Gasworks Dock Partnership 2022). As a result, when flood events do occur – when the river "breaks its banks" – the consequences are more extreme, sometimes physically immobilizing communities in neighboring areas and causing considerable spatial (and environmental) damage (Elgueta and Ford 2024). As suggested in Usher and colleagues' (2021) study on mobile community memories of a culverted brook in Manchester, heightened fear of "uncontrollable" water may exacerbate community aversion toward rivers and, thus, damage their social connectivity with them. Furthermore, on an everyday basis, the walls and weirs canalizing the Lea separate passersby from the water surface by several meters. Consequently, the interactions between humans and the river water (including its ecologies) remain somewhat distant and static, resulting in what Kondolf and Pinto (2017) describe as inhibited vertical connectivity.

Safeguarding Scaffolds for Life

The discussion so far has been quite human-centric; highlighting how various infrastructural factors and non-human (im)mobilities may support or suppress human engagements with water-heritage sites. While critically inventorying and improving human mobility is, undeniably, imperative to maximizing the potential of rivers and their natural and historical offerings, so is safeguarding rivers' ecosystems (Houart 2023). A third value of a mobilities lens in studying the water-heritage nexus, then, is its ability to heed the movements and moorings of more-than-human entities. Although ecosystems are indispensable to rivers' natural heritage and sustainability, the mobilities of their occupants are frequently compromised by seemingly progressive accessibility improvements.

The *Lower Lea Bridges* program, co-orchestrated by several borough councils, exemplifies recent regeneration interventions aimed at reintegrating the Lea into East London, specifically by improving riverside accessibility. It involves the construction of three footbridges so the Lea



^ Fig. 6 Map of the *Lower Lea Bridges* program (Source: Tower Hamlets, n.d.).

^ Fig. 7 Coot nesting in an abandoned boat on the Lea (Source: Maia Brons, 2023).

no longer presents a "physical barrier for the local community," but instead starts fulfilling its potential as "one of the most important natural, heritage and cultural assets" in the area (Tower Hamlets n.d.) (fig. 6).

In celebrating the advantages of such initiatives for local residents, their impact on existing ecosystems may be overshadowed – especially when, as has long been the case with the Lea, post-industrial rivers are perceived as having little ecological value, often due to an absence of well-established ecological databases (Gasworks Dock Partnership 2022). However, the image of the Lea as an ecologically derelict "wasteland" (Verdini and Dean 2022, 251) is incomplete. Indeed, partly thanks to its repellent (yet contestable) post-industrial reputation, the Lea saw little human activity for half a century, up until the early 2000s. During this time, animals have been able to construct scaffolds for life without interruption (fig. 7), cultivating a paradoxical post-industrial riverscape that is "murky and rubbish-strewn [but also] ecologically and materially rich" (Wallace and Wright 2022, 188). Demonstratively, through the aforementioned citizen-science data-collection initiatives, the presence of 30 London Priority Species has been reported, alongside that of dozens of threatened and globally declining bird, invertebrate and other species (Gasworks Dock Partnership 2022).

This context throws the plans to reintegrate the Lower Lea Valley into the urban landscape through invasive infrastructural "improvements" into sharp relief: while human mobility may improve, more-than-human mobilities, or entire

habitats, could perish. At the time of writing, the planned construction for bridge A of the *Lower Lea Bridges* program (fig. 6) will likely involve the removal of reedbeds which have grown without disturbance for decades. These reedbeds have essential flood mitigation and water-filtering properties (Verdini and Dean 2022). Moreover, they are indispensable to the mobilities of other more-than-human entities: birds nest in them and fish use them to navigate the tides. Their removal, even to benefit human accessibility, would be detrimental to local ecosystems and the Lea's overall natural heritage. Here, the role of local communities who engage with the river through mobile ecological experiences becomes even more pronounced: they render visible and inscribe social and emotive value to essential, yet often disregarded, river ecologies. This adds weight to the imperative of treating post-industrial rivers as water-heritage sites that should be inclusive not only of a variety of people and abilities, but also a variety of species.

Conclusion

At the junction of rampant urban regeneration and persistent environmental pollution, the task of studying post-industrial rivers and their natural and historical heritage – and optimizing ways to (re)connect communities with them – becomes ever more important, but also more intricate. A mobilities lens, if used critically, can illuminate new ways to understand not only the physical mobility provisions necessary for human accessibility and aesthetic needs, but also the (im)mobilities of infrastructures, ecologies and more-than-human species that shape water-heritage sites and human interactions with them. A mobilities lens can constitute a symbolic bridge between past and present as well as between different stakeholders, spaces and species. Strengthening these connections is a crucial step in mapping the opportunities and challenges of post-industrial rivers as key water-heritage frontiers. Although the conceptual confluence of mobility, water and heritage requires more careful consideration, it holds the potential to inform river regeneration initiatives (including the building of actual bridges) which, rather than trampling valuable ecosystems, can revive relationships between communities and rivers, in spite – or in appreciation – of industrial ruination.

Policy Recommendations

- Policymakers, local authorities and urban planners may benefit from incorporating mobility as a key tenet of (post-industrial) river regeneration schemes. Adopting a holistic approach to mobility, as demonstrated in this paper, may improve the sustainability and inclusivity of projects, both for urban communities and local ecologies.

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References

Boas, Ingrid, Hanne Wiegel, Carol Farbotko, Jeroen Warner and Mimi Sheller. 2022. "Climate Mobilities: Migration, Im/mobilities and Mobility Regimes in a Changing Climate." *Journal of Ethnic and Migration Studies* 48, no. 14: 3365–79. https://doi.org/10.1080/1369183X.2022.2066264.

Bussi, Gianbattista, Paul G. Whitehead, Rosie Nelson, John Bryden, Cristopher R. Jackson, Andrew G. Hughes, Adrian P. Butler, et al. 2022. "Green Infrastructure and Climate Change Impacts on the Flow and Water Quality of Urban Catchments: Salmons Brook and Pymmes Brook in North-East London." *Hydrology Research* 53, no. 4: 638–56. https://doi.org/10.2166/nh.2022.013.

Clifford, Jim. 2017. *West Ham and the River Lea: A Social and Environmental History of London's Industrialized Marshland, 1839–1914*. Vancouver: UBC Press.

Corten, Jean-Paul. 2023. "Pondering the Past: Exploring the Synergy between Water Management and Heritage Management." *Blue Papers* 2, no. 2: 56–67. https://doi.org/10.58981/bluepapers.2023.2.05.

Design for London. 2013. "Stitching the Fringe: Working around the Olympic Park." Accessed January 5, 2024. https://live-qeop.pantheonsite.io/sites/default/files/attachments/s136682673StitchingtheFringeApr2013.pdf.

Dunkley, Ria Ann. 2018. "Monitoring Ecological Change in UK Woodlands and Rivers: An Exploration of the Relational Geographies of Citizen Science." *Transactions - Institute of British Geographers* 44: 16–31. https://doi.org/10.1111/tran.12258.

Elgueta, Adriana, and Nicky Ford. 2024. "Hackney Wick: Homes and Businesses Ruined by Floodwater." BBC News. Accessed February 18, 2024. https://www.bbc.com/news/uk-england-london-67892011.

Gasworks Dock Partnership. 2022. "Cody Dock Tidal Lea Ecology Report: 2021–22." Accessed January 5, 2024. https://codydock.org.uk/wp-content/uploads/2022/06/Final-Cody-Dock-Ecology-Report-2021-spreads-AW.pdf.

Goh, Kian. 2021. *Form and Flow: The Spatial Politics of Urban Resilience and Climate Justice.* Cambridge, MA: MIT Press.

Hein, Carola. 2016. "Port Cities and Urban Waterfronts: How Localized Planning Ignores Water as a Connector." *WIREs Water* 3: 419–38. https://doi.org/10.1002/wat2.1141.

Houart, Carlota. 2023. "Engaging with Water and Rivers from a Multispecies Justice Perspective." *Blue Papers* 2, no. 1: 50–7. https://doi.org/10.58981/bluepapers.2023.1.05.

Kaaristo, Maarja, Dominic Medway, Jamie Burton, Steven Rhoden, and Helen L. Bruce. 2020. "Governing Mobilities on the UK Canal Network." *Mobilities* 15, no. 6: 844–61. https://doi.org/10.1080/17450101.2020.1806507.

Kondolf, G. Mathias, and Pedro J. Pinto. 2017. "The Social Connectivity of Urban Rivers." *Geomorphology* 227: 182–96. https://doi-org.libproxy.ucl.ac.uk/10.1016/j.geomorph.2016.09.028.

Laville, Sandra. 2020. "Revealed: Raw Sewage Poured into Olympic Park Wildlife Haven." *The Guardian* (July 2). Accessed January 5, 2024. https://www.theguardian.com/environment/2020/jul/02/raw-sewage-olympic-park-wildlife-haven-wetlands-london-thames-water.

Mah, Alice. 2010. "Memory, Uncertainty and Industrial Ruination: Walker Riverside, Newcastle upon Tyne." *International Journal of Urban and Regional Research* 34, no. 2: 243–51. https://doi.org/10.1111/j.1468-2427.2010.00898.x.

Patroncini, Deborah, Fabio Veronesi, and David Rawson. 2014. "Evaluation of River Water Quality: A Case Study of the Lea Navigation (NE London)." *Water, Air & Soil Pollution* 225: 1–16. http://dx.doi.org.libproxy.ucl.ac.uk/10.1007/s11270-014-2090-y.

Read, Simon. 2017. "Cinderella River." Accessed February 12, 2024. https://repository.mdx.ac.uk/

Restemeyer, Britta, Margo van den Brink, and Johan Woltjer. 2019. "Decentralised Implementation of Flood Resilience Measures – A Blessing or a Curse? Lessons from the Thames Estuary 2100 Plan and the Royal Docks Regeneration." *Planning Practice & Research* 34, no. 1: 62–83. https://doi.org/10.1080/02697459.2018.1546918.

Rhoden, Steven, and Maarja Kaaristo. 2020. "Liquidness: Conceptualising Water within Boating Tourism." *Annals of Tourism Research* 81: 1–10. https://doi-org.libproxy.ucl.ac.uk/10.1016/j.annals.2019.102854.

Sodero, Stephanie. 2022. *Under the Weather: Reimagining Mobility in the Climate Crisis*. Kingston, Ontario: McGill-Queen's University Press.

Tower Hamlets. n.d. "Lower Lea Bridges." Accessed February 19, 2024. https://talk.towerhamlets.gov.uk/lower-lea-bridges.

Usher, Mark, Jonathan Huck, Gareth Clay, Emma Shuttleworth, and Janice Astbury. 2021. "Broaching the Brook: Daylighting, Community and the 'Stickiness' of Water." *EPE: Nature and Space* 4, no. 4: 1487–514. https://doi-org.libproxy.ucl.ac.uk/10.1177/2514848620959589.

Verdini, Giulio, and Corinna Dean. 2022. "Climate Urbanism in the Post-Pandemic World: Mapping Vulnerabilities and Exploring Community Activism in East London." In *Design for Vulnerable Communities,* edited by Emanuele Giorgi, Tiziano Cattaneo, Alfredo Mauricio Flores Herrera, Virginia del Socorro and Aceves Tarango, 245–62. Cham: Springer.

Wallace, Andrew, and Katy Wright. 2022. "The Post-Industrial English Canalscape: From Enclosure to Enlacement." *Cultural Geographies* 29, no. 2: 185–202. https://doi-org.libproxy.ucl.ac.uk/10.1177/14744740211029275.

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