

## **Introduction: London's River? The Thames as a Contested Environmental Space**

A Special Issue of *The London Journal*.

This special issue of *The London Journal* explores the environmental history of the River Thames since 1960 and its role in linking London to its neighbours. The past fifty years have brought fundamental change in the relationship of many cities to their rivers. In the case of the Thames there has been: the closure of London's docks and the port's move downriver to Essex; the regionalisation of water institutions and loss of metropolitan control over water supply, sewerage, pollution and flood defence; the biological death and rebirth of the tidal river; the formation of influential environmental pressure groups; privatization of water and sewerage; the emergence of national and international environmental regulators. European Union 'directives', from Birds (1979), Habitats (1992) and Groundwater (2006) to the Water Framework Directive (2000), have been influential in a shift away from narrow concerns with river pollution towards an 'ecosystem approach' to the river, foreshore and riverside marshes. Since the return of pan-London governance in 2000, the Mayor's *London Plan* (2004 especially) has claimed the capital's rivers and waterways as integral to its role as an 'exemplary, sustainable world city'.<sup>1</sup> This issue takes 'London's River? The Thames as a Contested Environmental Space' as a central theme because these environmental and governance changes represent a major reorientation of interests and communities in relation to the Thames.

The question of who controls the river is a long-standing, persistent source of conflict. And issues of environmental justice and democracy are never far away. Who has the right to decide what the river is for and how it should be managed? Who should have a say in policy on resource allocation and environmental risk? Historians have explored these debates in relation to the Victorian Thames. Its environmental problems are central to the rich historiography of the nineteenth-century capital, addressing the fusion of scientific and political debate around public health, water supply and the ownership and control of public services.<sup>2</sup> For many, the Thames and its water supply formed part of the birthright of Londoners as citizens, ratepayers and consumers.<sup>3</sup> There has not been a parallel interest in the fate of these ideas and aspirations in the late twentieth century. Historical research into the

recent past of the Thames has focused especially on the struggle over the closure and transformation of London's docklands (the iconic moment of conflict on the twentieth-century river), on tensions between the Greater London Council (GLC) and central government, and on the river as a site of cultural memory.<sup>4</sup> Increasingly in recent years environmental historians have explored the impacts on rivers of urbanization and industrial stress, and of subsequent de-industrialization.<sup>5</sup> There are excellent studies of the post-war Thames clean-up and flood defence work.<sup>6</sup> These remain at some distance from the focus of urban and metropolitan history, however.

Historians of London can learn much from discussions of waterfront 'regeneration' and shifting forms of governance within planning literature, and from recent social science analyses of stakeholder networks, deliberative democracy and social learning in environmental management.<sup>7</sup> Understanding the Thames today requires a river-centred, historical exploration of changes in the condition of the river, but also of changing ideas about citizenship and governance, and of the ways in which the river connects and excludes different communities along its course. The political ecology literature on water over the past fifteen years has highlighted crucial connections between the possession of economic and political power and access to hydrological resources.<sup>8</sup> In this context too, however, privatization (1989) and management re-structuring in the UK water sector have been linked to a diminution of citizenship, especially in the light of the abolition of metropolitan government and local government reform in the 1980s. Part of a wider sense of loss that pervades discussions of the river and London's water supply of the 1970s and '80s, this historical decline has been suggested more than explored in detail, however.<sup>9</sup> An important question to be asked – which this journal issue in part seeks to address – is not only 'whose river is the Thames?' but also 'whose river has it ever been?'. There has been no golden age of citizenship for the Thames.

Rivers have always been enmeshed in dominant economic and political discourses: in Britain, in the shifts from 'permissive' Victorian liberalism, through municipal and state socialism, to neo-liberalism, and the stakeholder theory and 'communicative planning' modes of the mid 1990s and 2000s. As unruly environments, they also overflow the banks of any single ideology or management structure. Because of the ways in which they connect 'involuntary neighbours', rivers are always social and political as well as natural entities involving conflicts over resource allocation and environmental risk.<sup>10</sup> The Thames is a river – or set of rivers, including its tributaries – constantly under threat. Today threats come from pollution,

rising river temperatures, sea level rise and land-based encroachment. The river itself also constitutes a hazard. Thames flooding in 1928 killed 14 people in central London basements; 350 people died in the 1953 east coast storm surge flood. Decisions needed to be taken about what, who and how to protect, but inability to reach agreement between different agencies and government departments held up new flood defences until the 1970s. The opening of the Thames Barrier in 1984 became a symbol of conflict between the soon-to-be-abolished 'New Left' GLC and the 'New Right' central government.<sup>11</sup> Decisions on future Thames flood risk management in the face of climate change will be equally political, if not necessarily so politicized.

The river has seen remarkable bio-physical changes since 1960, from severe degradation to current claims to its status as the "cleanest metropolitan estuary in the world", winning the International Thiers Riverprize in 2010.<sup>12</sup> The changing landscape of governance for the Thames has been equally striking. The rise of 'river-basin management', replacing localised governance in the 1970s, saw the re-orientation of river management away from London, with headquarters for water supply, sewerage, pollution control and conservancy moving westwards to Reading in Berkshire. This partially transformed the linear river into a Thames region – the whole basin under one Thames Water Authority (1974), privatized as Thames Water Utilities Ltd in 1989 – but it did not eradicate localised affiliations across the river and wider region.

The river is a major public space and physical entity connected to millions of homes, industries and commercial premises through water supply and waste disposal, and to a myriad of conflicting activities, from angling to the Port of London (the second largest in the country). It continues to engender tensions between different interests and communities. Plans for reservoir building to increase capacity for urban supplies have created recurring conflicts in rural upper Thames areas since the early twentieth century. These live on in the opposition of 'Group against Reservoir Development' to Thames Water's plans for Oxfordshire.<sup>13</sup>

For many, the Thames and its tributaries prompt questions about the 'meaning' of rivers, as Phil Pinch discusses in this issue, and assertions of a common right to decide their fate. As the arts and environmental group 'Platform' put it in the 1990s: 'The state of our city's water reflects the state of civil society'.<sup>14</sup> The river can be seen as central to the shared identity of Londoners – as in the title sequence of the BBC TV soap opera, *EastEnders* (1985-) – and a dividing line of identity, between north and south Londoners. Its importance as a shared

resource and public space for leisure has in recent decades been symbolised, as Pinch's article shows, by rights of access to the river and its foreshore.<sup>15</sup> But there is no way of fully encompassing what the Thames has meant to those living on its banks even over the past fifty years: its spiritual as much as its secular meanings are constantly changing, as suggested by recent evidence for the incorporation of the river into Hindu ritual.<sup>16</sup>

The question 'whose river?' extends across the river basin and applies equally to tributaries. And how to manage tensions between these different scales is an ongoing challenge. The upsurge of local community activity around tributary (or 'catchment') restoration in recent years indicates the radically changing valuation of rivers at grassroots level, as does increasing popular interest in tracing and reclaiming the Thames' 'lost rivers' (tributaries that have been culverted and used as sewers).<sup>17</sup> Pressure from civil society groups has prompted the Department for Environment, Food & Rural Affairs (Defra) and Environment Agency to lend some support to collaborative, localised 'catchment-based' initiatives within river-basin planning.<sup>18</sup>

At the other end of the scale, calls for a single governance structure for the river have a long history and are still heard today.<sup>19</sup> The river's management structure remains notably fragmented. Navigation control is divided between the freshwater and tidal river. More significant is the split between river- and land-based local authorities, and the river's intersection with multiple policy arenas, including transport, ports, town planning, aggregates and the environment. River and water resources have been awkwardly situated in relation to regional planning, from the *South East Study* (1964) to the *Regional Spatial Strategy for the South East* (2009). The Thames Gateway 'regeneration' – a high profile sub-regional strategy partially dismantled in the 2010 'bonfire of the quangos' – demonstrates the river's potential for inspiring visions for land-based change as well as the complexity and fragility of regional policies.<sup>20</sup>

Ways of seeing the river are as changeable as the river itself. While the rural and 'Arcadian Thames' has long had its admirers, from William Morris to Kim Wilkie's landscape strategy (1994),<sup>21</sup> the estuary has been harder to love. But it too has undergone revaluation, in the form of a reassessment of estuary ecosystems since the 1960s (which Vanessa Taylor discusses) and in the more recent cultural re-appraisal of the estuary as an aesthetic space fusing nature with living and decaying industrial, port and defence infrastructure. Jonathan Meades recently called it an 'Area of Outstanding Unnatural Beauty'. The Museum of London Docklands' 'Estuary' exhibition (2013) signalled this changed perception.<sup>22</sup>

Many of the challenges faced by the Thames are common to every urban, industrialised tidal river in Britain. The Tyne, Mersey, Clyde and Forth have similar stories of multiple shifting pressures, competing interests, problems of balancing efficiency and democracy, environmental decline and restoration, of cities dominating their hinterlands.<sup>23</sup> Flowing through the capital city, however, the Thames is also different. It is always potentially a 'national' river and, as the 2012 celebrations reminded us, a 'Royal river'.<sup>24</sup> Since the 1990s London's status as a 'world city' has shaped policy debates,<sup>25</sup> ratcheting up the city's resource entitlements with potential impacts well beyond London. Almost half a century after plans for Maplin Sands airport first excited opposition, the Mayor of London's 'floating airport' in the lower estuary is only one of several proposals for London's fourth airport in this area. Threats to the estuary's communities and habitats are by no means at an end.

Estimations of value are not always neatly separated between opposing or geographically distinct groups, of course. The condition of the river concerns and implicates us all. How clean do we want the Thames to be? If as environmentally conscious citizens we want a salmon river once again, are we as bill-paying water consumers prepared to pay for it? The Thames Tideway Tunnel – the infrastructure now underway to address polluting storm water overflows – has sparked debate over questions of cost. And the dauntingly complex but visionary proposals for 'sustainable urban drainage', as an alternative to this 'super-sewer' which perpetuates the 'combined' rainwater and sewage system, show that the Thames continues to be a volatile arena of environmental and political conflict where questions of public interest and value for money are thrashed out.<sup>26</sup> For now, the jumbo-project approach – deliverable and 'owned' by a small number of agencies – prevails.

This special issue was inspired by a conference held at the University of Greenwich in 2013: 'Running the River: How the Past Informs the Present'.<sup>27</sup> The six papers presented here come from a range of disciplines, including history and the museum sector, geography, archaeology and environmental science. Representing different approaches to the Thames environment, they shed light on its multi-faceted and mutable nature as a physical entity and as a political and cultural space.

In the first of three short articles, Alex Werner explores changing views of the river through photographs of the old and recent Thames held in the collections of the Museum of London and Port of London Authority. The theme of loss is evident here, but these images momentarily restore something of what has gone. Contrasting panoramas from the 1930s and 2000s show that not only were the docks lost, but also many hundreds of wharves once

integral to the life of the river. These images vividly demonstrate what other historical sources cannot. Changing valuations of the river are revealed in surprising and nuanced ways. There are unusual juxtapositions: children play on a beach in the busy shipping 'Pool' of 1930s London. The aesthetic appreciation of the polluted river found in early twentieth-century photographs reminds us that beauty and environmental health are not the same thing. By contrast with these images, the empty river views of real estate promotions testify to altered functions and new estimations of worth.

Gustav Milne considers archaeological evidence for the changing environmental condition of the river, from the research kick-started by the 1953 flood to recent foreshore studies. The re-development of the riverside following dock closures also created new opportunities for archaeology. Examining evidence for the impacts of sea level rises (and falls), land subsidence and the 'canalisation' of the Thames, he shows that long-term past patterns can inform understanding of future flood risks. The interdependence of everything that happens on the river is suggested by the potential problems of 'far-field wake' produced by high-speed passenger boats. Milne considers efforts to understand current high rates of erosion and tidal scour, which are revealing new traces of the past at the same time as they threaten past and present riverside structures. The Thames of these articles by Milne and Werner is London's river: the river that made the city and was in turn re-shaped by it.

Sarah Palmer examines traces of the river's environmental past to be found in archives in London and the Thames region. These are scattered across a wide range of collections, reflecting the management of the river itself. She points to the imbalance between the abundance of official and central government documents, and the patchy record left behind by the hundreds of local and interest groups of the past fifty years. As Palmer shows, there is nevertheless considerable, under-explored potential for researching the activities and concerns of those who have lived and worked beside the river, and revealing alternative visions for the river which have sometimes made a difference.

Hadrian Cook's article – the first of three longer articles – offers a long-term view of the river Wandle, the beleaguered chalk stream that enters the Thames through South London. His study of this 'unimportant river in the neighbourhood of London' demonstrates that the tributaries and groundwater shared in the problems of the Thames, with competing interests and recurring pollution events. Cook shows the profusion of voluntary and amenity bodies that have sought to influence the Wandle since the nineteenth century, from local conservation and protection bodies to the National Trust and Campaign for the Preservation

of Rural England. He traces these continuing pressures and efforts to restore natural processes to the river up to today.

Vanessa Taylor explores spatial and political dimensions of the question of 'London's' river?' through the capital's relationship with the lower estuary as a form of 'ecological hinterland' since 1960. The tidal river, still run by semi-representative organisations at the start of this period, was dominated by the priorities of London's port and waste disposal needs. Taylor argues, however, that the need to legitimize policy in the eyes of both central government and the public meant that inconvenient externalities and widespread criticism also needed to be addressed. The late 1960s saw an emerging shift towards 'managerial' forms of governance but also a broadening of conceptions of environmental value and – with the rise of influential environmental pressure groups – an extension of claims to have a say in the running of the Thames.

In examining the potential domination of the river by late capitalist land-based property development within the city, Phil Pinch sheds another light on 'London's river?'. He draws on recent critiques of the neo-liberal ideology underlying the docklands' redevelopment, but also emphasizes the achievement of negotiated understandings of the river and – in the light of Lefebvrian and 'actor network' theory – the key role played by public resistance and networks of diverse actors in creating alternative visions of 'water space'. The river survives here as a dynamic process and social space.

Pinch's article highlights the turn towards Habermasian collaborative or 'communicative' planning and deliberative democracy, with the planning process conceived as a realm of consensus negotiated through dialogue and the active participation of different actors. This approach has had a wide currency among academic writers on rivers and natural resources management in recent years.<sup>28</sup> Pressure groups and public debate on the Thames have a long history, as the articles in this issue show, but there has been a step change since the 1990s with the increased incorporation of non-state actors into participatory decision-making. This is evident in the recent proliferation of river trusts, public/private partnerships, state/voluntary sector collaborations and 'citizen science' projects.<sup>29</sup> It is important to keep in mind in this context the ambiguities of 'the public' and the implicit and explicit ways in which 'imagined publics' are invoked by policy-makers, regulators and service providers, as well as by campaigners themselves: as Londoners, tourists, citizens, consumers, taxpayers, residents, communities, environmentalists, river or port users, stakeholders, 'Nimbys' and, in the

language of sustainability, 'future generations'.<sup>30</sup> The question of 'London's river?' is a matter of perceived identities as much as perceived rights.

Future research into the environment of the Thames and other rivers will build on already established areas such as debates over water supply, flooding, drought and pollution, urban drainage, rights to groundwater, riverside development, land-based encroachment on the river,<sup>31</sup> public vs. private ownership of natural resources, and forms of governance. Shifting regulatory frameworks are creating new areas for investigation, such as the implications of 'habitat compensation' schemes along the estuary and coastline.<sup>32</sup> Climate change and global warming move to centre-stage the problems of sea-level rise and coastal erosion, involving crucial decisions over who and what to protect, as well as changing riverine and marine animal populations, and rivers as a source of renewable energy.<sup>33</sup> A new atmosphere of future uncertainty and crisis inspires dystopian and utopian visions (**Figures 1 and 2**), but also potentially lends strength to positivist arguments about necessary solutions.<sup>34</sup> The past thirty years of historical and geographical work on the political, socially constructed or 'socio-technical'<sup>35</sup> basis to solutions in river and water governance reminds us that the Thames, like other rivers, remains a politically negotiable work-in-progress as well as a force of nature.

[3,148 words]

## Endnotes

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<sup>1</sup> Mayor of London, *The London Plan: Spatial Development Strategy for Greater London* (2004), Section 4.74. <[http://static.london.gov.uk/mayor/strategies/sds/london\\_plan/lon\\_plan\\_all.pdf](http://static.london.gov.uk/mayor/strategies/sds/london_plan/lon_plan_all.pdf)> [accessed 28 January, 2015]; M. Davidson, 'London's Blue Ribbon Network: Riverside Renaissance along the Thames', in R. Imrie, L. Lees and M. Raco (eds.), *Regenerating London: Governance, Sustainability and Community* (2008).

<sup>2</sup> B. Luckin, *Pollution and Control: A Social History of the Thames in the Nineteenth Century* (Bristol, 1986); B. Luckin, 'The Metropolitan and the Municipal: the Politics of Health and Environment in London, 1860-1920', in R. Colls and R. Rodger (eds.), *Cities of Ideas: Governance and Citizenship in Urban Britain* (Aldershot, 2004), 46-66; C. Hamlin, *A Science of Impurity: Water Analysis in 19th Century Britain* (Bristol, 1990); C. Hamlin, *Public Health and Social Justice in the Age of Chadwick* (Cambridge, 1998); A. Hardy, 'Parish Pump to Private Pipes: London's Water Supply in the Nineteenth Century', in W.F. Bynum and R. Porter (eds.), *Living and Dying in London* (1991), 76-93; A.K. Mukhopadhyay, 'The Politics of London Water', *London Journal*, 1 (1975), 207-24; A.K. Mukhopadhyay, *Politics of Water Supply: The Case of Victorian London* (Calcutta, 1981); S. Halliday, *The Great Stink: Sir Joseph Bazalgette and the Cleansing of the Victorian Metropolis* (Stroud, 1999); J. Hillier and S. Bell, 'The "Genius of Place": Mitigating Stench in the New Palace of



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Westminster before the Great Stink', *London Journal*, 35:1 (2010), 22-38; J. Broich, *London: Water and the Making of the Modern City* (Pittsburgh, Pa, 2013).

<sup>3</sup> F. Trentmann and V. Taylor, 'From User to Consumer: Water Politics in Nineteenth-Century London', in F. Trentmann (ed.), *The Making of the Consumer* (Oxford/New York, 2006), 53-79; V. Taylor and F. Trentmann 'Liquid Politics: Water and the Politics of Everyday Life in the Modern City', *Past and Present*, 211 (2011), 199-241.

<sup>4</sup> R. Porter, *London: A Social History* (1994); S. Schama, *Landscape and Memory* (1996), 352-82; J. White, *London in the Twentieth Century: A City and its People* (2001); J. Schneer, *The Thames: England's River* (2005); S. Inwood, *City of Cities: The Birth of Modern London* (2005); P. Ackroyd, *Thames: Sacred River* (2007). A. Warwick, 'Reading the Thames: An Introduction', The Thames Symposium, *Literary London: Interdisciplinary Studies in the Representation of London*, 5:1 (March 2007), <<http://www.literarylondon.org/london-journal/march2007/warwick.html>> [accessed 8 July 2015].

<sup>5</sup> e.g. J.A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Ohio, 1996); S. Castonguay and M. Evenden (eds.), *Urban Rivers: Remaking Rivers, Cities, and Space in Europe and North America* (Pittsburgh, Pa., 2012).

<sup>6</sup> L.B. Wood, *The Restoration of the Tidal Thames* (Bristol, 1982); S. Gilbert and R. Horner, *The Thames Barrier* (1984).

<sup>7</sup> For planning, see e.g.: I. Newman and M. Mayo, 'Docklands', *International Journal of Urban and Regional Research* (1981) 529-545; P.J. Ambrose, *Whatever Happened to Planning?* (1986); A. Church, 'Urban Regeneration in London Docklands: A Five Year Policy Review', *Environment and Planning C: Government and Policy*, 6 (1986), 218-37; R. Batley, 'London Docklands: An Analysis of Power Relations between UDCs and Local Government', *Public Administration*, 67 (1989), 167-87; G. Nicholson, 'London Docklands: A Model of How Not to Regenerate an Urban Area', *Town and Country Planning*, 58:29 (1989); S. Brownill, *Developing London's Docklands: Another Great Disaster?* (1991); P. Ogden, *London Docklands: The Challenge of Development. Update* (Cambridge, 1992); K. Bassett, R. Griffiths and I. Smith, 'Testing Governance: Partnerships, Planning and Conflict in Waterfront Regeneration', *Urban Studies*, 39:10 (2002), 1757-75. For stakeholders, see: B. Page, 'Has Widening Stakeholder Participation in Decision-Making Produced Sustainable and Innovative Water Policy in the UK?', *Water Policy*, 5 (2003), 313-29; M.S. Reed, et al, 'Who's In and Why? A Typology of Stakeholder Analysis Methods for Natural Resource Management', *Journal of Environmental Management*, 90:5 (2009), 1933-49. For social learning, see e.g.: L. McFadden, S. Priest and C. Green, *Report: Introducing Social Learning: A Guide for SPICOSA Scientists* (April 2008) <[http://www.coastal-saf.eu/issue-identification/support/introducing\\_social\\_learning.pdf](http://www.coastal-saf.eu/issue-identification/support/introducing_social_learning.pdf)> [accessed 30 January, 2015]; J. Petts, 'Managing Public Engagement to Optimize Learning: Reflections from Urban River Restoration', *Human Ecology Review*, Vol. 13: 2 (2006), 172-81 <<http://www.humanecologyreview.org/pastissues/her132/petts.pdf>> accessed 28 January, 2015.

<sup>8</sup> E. Swyngedouw, M. Kaïka and J.E. Castro, 'Urban Water: A Political-Ecology Perspective', *Built Environment*, 28:2 (2002), 124-37; K. Bakker, *An Uncooperative Commodity: Privatizing Water in England and Wales* (Oxford, 2003).

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<sup>9</sup> e.g. J.E. Castro, M. Kaïka and E. Swyngedouw, 'London: Structural Continuities and Institutional Change in Water Management', *European Planning Studies*, 11:3 (2003), 283-98. See also: Luckin, *Pollution and Control*, 182.

<sup>10</sup> D. Kinnersley, *Troubled Water: Rivers, Politics and Pollution* (1988), 2. For the hydrological cycle itself as 'hydrosocial', see: Bakker, *Uncooperative Commodity*, 28-29; E. Swyngedouw, 'The Political Economy and Political Ecology of the Hydro-Social Cycle', *Journal of Contemporary Water Research & Education*, 142 (2009), 56-60

<[http://ucowr.org/files/Achieved\\_Journal\\_Issues/v142The\\_Political\\_Economy\\_and\\_Political\\_Ecology\\_of\\_the\\_Hydro-Social\\_Cycle.pdf](http://ucowr.org/files/Achieved_Journal_Issues/v142The_Political_Economy_and_Political_Ecology_of_the_Hydro-Social_Cycle.pdf)> [accessed 28 January, 2015]; J. Linton, 'Modern Water and its Discontents: A History of Hydrosocial Renewal', *Wiley Interdisciplinary Reviews: Water* (2014), 111-20.

<sup>11</sup> 'Floods in the City', *The Times*, 7 January 1928, 10. For a detailed account available online, which also suggests the perceived significance of flood event well beyond England's capital, see 'London Flooded', *The Sydney Morning Herald*, 9 January 1928, <<http://trove.nla.gov.au/ndp/del/article/16432635>> [accessed 9 January, 2015]. See also: Gilbert and Horner, *Thames Barrier*; Schneer, *Thames*, 250-62; A. Carlsson-Hyslop, 'Storm Surge Science: The London Connection 1928-1953', in J. Galloway (ed.), *Tides and Floods: New Research on London and the Tidal Thames from the Middle Ages to the Twentieth Century* (2010); M. Cox, 'Exposed: The Remarkable Plan to Flood County to Save London', *Kent on Sunday*, 4 August 2013, 1-2. For earlier flooding, see: J. Lewin, 'Medieval Environmental Impacts and Feedbacks: The Lowland Floodplains of England and Wales', *Geoarchaeology*, 25:3 (2010), 267-311; J.A. Galloway, 'Storms, Economics and Environmental Change in an English Coastal Wetland: The Thames Estuary c. 1250-1550', in E. Thoen, et al, *Landscapes or Seascape? The History of the Coastal Environment in the North Sea Area Reconsidered* (Turnhout, 2013), 379-96.

<sup>12</sup> For an important recent assessment of the Thames, see M.J. Attrill, 'How Clean is the Thames?', Gresham College Lecture, October 2006, <<http://www.gresham.ac.uk/lectures-and-events/londons-ecology-how-clean-is-the-thames>> [accessed 7 July, 2015]. Thiess International Riverprize <<http://www.riverfoundation.org.au/index.php>> [accessed 28 January, 2015].

<sup>13</sup> Group Against Reservoir Development (GARD) <<http://www.abingdonreservoir.org.uk/index.html>> [accessed 28 January, 2015]; C.S. McCulloch, 'Size Matters: Plans for the Upper Thames Reservoir and the New Environmentalism', in A. Pepper (ed.), *Managing Dams: Challenges in a Time of Change* (2010), 48-57. See also: J. Sheail, 'Government and the Perception of Reservoir Development in Britain: An Historical Perspective', *Planning Perspectives*, 1:1 (1986), 45-60; C.S. McCulloch, 'Political Ecology of Reservoirs in Teesdale', in H. Hewlet (ed.), *Long-term Benefits and Performance of Dams* (2004), 49-66.

<sup>14</sup> Platform website: 'Water' page <<http://old.platformlondon.org/water.asp>> [accessed 6 January, 2015].

<sup>15</sup> The Thames Path is also central to debates over access. Following decades of campaigning by the River Thames Society and Ramblers Association, it opened as part of the 'National Trail' since 1996. It runs for 184 miles from Gloucestershire to London and is now overseen by Natural England. A. Perkins, *25 Thames Years: A History of the River Thames Society* (1987), 114, 162-63; D. Sharp *Thames Path* (2010), 16; National Trail Website <<http://www.nationaltrail.co.uk/thames-path>> [accessed 7 July, 2015]. For current plans to extend the

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path out to the sea, see Thames Estuary Partnership Website, 'Thames Path City to Sea' <<http://www.thamesweb.com/projects-introduction/2014-06-18-15-09-55/thames-path-city-to-sea>> [accessed 7 July, 2015]. For a recent critique of river access, see: J. Shenker, 'Privatised London: The Thames Path Walk that Resembles a Prison Corridor', *The Guardian*, 24 February 2015, <<http://www.theguardian.com/cities/2015/feb/24/private-london-exposed-thames-path-riverside-walking-route>> [accessed 7 July, 2015].

<sup>16</sup> Thanks to Charlie Turpie for this point. N. Burdon, 'Hindu Finds from the Thames', *London Archaeologist* (Autumn 2004), 276-79, <[http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-457-1/dissemination/pdf/vol10/vol10\\_10/10\\_10\\_276\\_279.pdf](http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-457-1/dissemination/pdf/vol10/vol10_10/10_10_276_279.pdf)>; M. Gould, 'Riddle of the Hindu Relics in the Thames', *The Guardian*, 2 November 2005 <<http://www.theguardian.com/society/2005/nov/02/guardiansocietysupplement>>; R. Joglekar, 'Dunking Ganesh in the River Thames', India Real Time, 18 September 2013 <<http://blogs.wsj.com/indiarealtime/2013/09/18/dumping-ganesh-in-the-river-thames/>>; N. White, 'The Holy River Thames', Tide Line Art Blog, 12 August 2014, <<http://www.tidelineart.com/tideline-art-blog/the-holy-river-Thames>> [all accessed 7 July, 2015].

<sup>17</sup> e.g. Friends of the River Crane Environment (FORCE) <<http://www.force.org.uk/>> [accessed 29 January, 2015]; Quaggy Waterways Action Group <<http://www.qwag.org.uk/home/>> [accessed 29 January, 2015]; The Wandle Trust <<http://www.wandletrust.org/>> [accessed 29 January, 2015]; Ver Valley Society <<http://www.riverver.co.uk/>> [accessed 29 January, 2015]; *London Rivers Action Plan* (2009) <<http://www.therrc.co.uk/lrap/lplan.pdf>> [accessed 30 March, 2013]. For 'lost rivers', see: N.J. Barton, *The Lost Rivers of London: A Study of their Effects upon London and Londoners, and the Effects of London and Londoners upon Them* (1962; 1992); D. Brierley, 'Lost Rivers of London to Resurface in Boris Plan', *London Evening Standard*, 16 June 2008 <<http://www.standard.co.uk/news/mayor/lost-rivers-of-london-to-resurface-in-boris-plan-6915015.html>> [accessed 6 January, 2015]; T. Bolton, *London's Lost Rivers: A Walker's Guide* (2011); P. Talling, *London's Lost Rivers* (2011).

<sup>18</sup> e.g. Defra, *Catchment Based Approach: Improving the Quality of our Water Environment: A Policy Framework to Encourage the Wider Adoption of an Integrated Catchment Based Approach to Improving the Quality of our Water Environment* (2013) <<http://ccmhub.net/wp-content/uploads/2012/10/pb13934-water-environment-catchment-based-approach.pdf>> [accessed 28 January, 2015]; 'What is the Catchment-Based Approach?' <<http://ccmhub.net/case-studies/pilot-catchment-evaluation/evaluating-the-catchment-based-approach/>> [accessed 28 January, 2015]. For earlier work on catchment management, see: National Rivers Authority, *Thames 21 – A Planning Perspective and a Sustainable Strategy for the Thames Region* (1995), <[http://www.environmentdata.org/fedora/repository/object\\_download/ealit:3578/OBJ/20002455.pdf](http://www.environmentdata.org/fedora/repository/object_download/ealit:3578/OBJ/20002455.pdf)> [accessed 7 July, 2015].

<sup>19</sup> e.g. Thamesbank pressure group, <<http://www.appropedia.org/Thamesbank>>; R. Watson, *Thames Tideway Enforcement: The Case for a Single Unified Agency* (Unpublished PhD thesis, Middlesex University, 2006) <<http://eprints.mdx.ac.uk/2666/>> [both accessed 21 August, 2015].

<sup>20</sup> P. Cohen and M. J. Rustin (eds.), *London's Turning: Thames Gateway: Prospects and Legacy* (Aldershot: 2008); T. Farrell, *Shaping London: The Patterns and Forms that Make the Metropolis* (2009); 'Bonfire of the

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<<http://www.independent.co.uk/news/uk/politics/bonfire-of-the-quangos-bodies-to-be-abolished-2107709.html>> [accessed 30 January 2015].

<sup>21</sup> K. Wilkie, *Thames Landscape Strategy: Hampton To Kew / Environmental Design for the Thames Landscape Steering Group* (1994).

<sup>22</sup> J. Meades, 'Last Resort', in F. Watson, *Soundings from the Estuary* (2014). This phrase echoes Richard Wentworth's 2002 exhibition, 'An Area of Outstanding Unnatural Beauty', at General Plumbing Supplies, York Way, London N1. This put a spotlight on the changing urban fabric of King's Cross at a time of debate between local communities, planners, politicians and developers around plans for re-developing the former 'railway lands'. The impending loss of derelict land and infrastructure, like nature under threat, can inspire aesthetic re-evaluation. My thanks to Richard Dennis for pointing to this connection. Details available at <[http://www.artangel.org.uk/projects/2002/an\\_area\\_of\\_outstanding\\_unnatural\\_beauty](http://www.artangel.org.uk/projects/2002/an_area_of_outstanding_unnatural_beauty)> [accessed 7 July, 2015]. See also: 'Thames Estuary airport plans prompt new contemporary art exhibition at Museum of London Docklands' <<http://www.museumoflondon.org.uk/corporate/press-media/press-releases/estuary/>> [accessed 30 January, 2015].

<sup>23</sup> e.g. P.D. Jones, 'Water Quality and Fisheries in the Mersey Estuary, England: A Historical Perspective', *Marine Pollution Bulletin*, 53:1-4 (2006), 144-54; T.C. Smout, *The Firth of Forth: An Environmental History* (Edinburgh, 2012).

<sup>24</sup> Schmeer, *Thames*. See also: David Starkey's guest-curated exhibition marking Queen Elizabeth II's Diamond Jubilee: 'Royal River: Power, Pageantry and the Thames', National Maritime Museum, 2012, <<http://www.rmg.co.uk/visit/events/royal-river>>; the Thames Jubilee flotilla: 'Diamond Jubilee Thames Pageant cheered by crowds', BBC News, 3 June 2012 <<http://www.bbc.co.uk/news/uk-18312403>> [both accessed 7 July, 2015].

<sup>25</sup> G. Clark, *The Making of a World City: London 1991 to 2021* (Chichester, 2014).

<sup>26</sup> Thames Tideway Tunnels website <<http://www.thamestidewaytunnel.co.uk/>>. For opposition, see e.g.: *Report of the Thames Tunnel Commission* (2011), commissioned by five London Boroughs, <[https://www.lbhf.gov.uk/Images/BkACE%20Thames%20Tunnel%20Commission%202011%20WEB\\_tcm21-165704.pdf](https://www.lbhf.gov.uk/Images/BkACE%20Thames%20Tunnel%20Commission%202011%20WEB_tcm21-165704.pdf)>; 'Clean Thames Now and Always' <<http://cleanthames.org/>> [all accessed 6 July 2015].

<sup>27</sup> 'Running the River: How the Past Informs the Present' Conference, 11 July 2013, Greenwich Maritime Institute, University of Greenwich, funded by the Economic and Social Research Council (Project ES/I031502/1) <[http://www2.gre.ac.uk/\\_\\_data/assets/pdf\\_file/0011/885107/RTR-Conference-Report-as-of-160114.pdf](http://www2.gre.ac.uk/__data/assets/pdf_file/0011/885107/RTR-Conference-Report-as-of-160114.pdf)> [accessed 29 January, 2015].

<sup>28</sup> For assessments of deliberative democracy, see e.g. C. Mouffe, 'Deliberative Democracy or Agonistic Pluralism?', *Social Research*, 66:3, Prospects for Democracy (1999), 745-58; Y. Rydin, *Urban and Environmental Planning in the UK* (2nd edn; Basingstoke, 2003), 80-83, 339-41; W.F. Baber and R.V. Bartlett, *Deliberative Environmental Politics: Democracy and Ecological Rationality* (Cambridge, Mass, 2005); J. Petts and C. Brooks, 'Expert Conceptualisations of the Role of Lay Knowledge in Environmental Decisionmaking: Challenges for Deliberative Democracy', *Environment and Planning A*, 38:6 (2006), 1045-59; K.L. Blackstock

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<sup>29</sup> For state and voluntary collaboration, see e.g. the Mersey Basin Campaign (1985-2010) <<http://www.merseybasin.org.uk>>. For 'citizen science', see e.g.: London's Rivers (Zoological Society of London and others) <<http://www.zsl.org/conservation/regions/uk-europe/london%E2%80%99s-rivers>>; WeSenseIt: The Citizens' Observatory of Water <<http://wesenseit.eu/>> [all accessed 9 July, 2015].

<sup>30</sup> G. Walker, et al, 'Renewable Energy and Socio-Technical Change: Imagined Subjectivities of the 'The Public' and their Implications', *Environment and Planning A*, 42:4 (2010), 931-47; J. Barnett, et al, 'Imagined Publics and Engagement around Renewable Energy Technologies in the UK', *Public Understanding of Science*, 21:1 (2012), 36-50. Thanks here to Liz Sharp's discussion of contrasting ideal citizens in the water sector in 'Water Company Governance and the Imagined Public', paper presented at: 'Running the River: How the Past Informs the Present' Conference, 11 July 2013 (see n. 27 for details of the conference). For the influential definition of sustainability in relation to future generations, see the *Report of the World Commission on Environment and Development: Our Common Future* (1987) [Brundtland Commission], see: <<http://www.un-documents.net/ocf-02.htm>> [accessed 9 July, 2015].

<sup>31</sup> e.g. see D.H. Porter, *The Thames Embankment: Environment, Technology, and Society in Victorian London* (Akron, Ohio, 1998); S. Oliver, 'Fantasies in Granite: The Thames Embankments as a Boundary to the River'. *Literary London: Interdisciplinary Studies in the Representation of London*, 5:1 (2007), <<http://www.literarylondon.org/london-journal/march2007/oliver.html>> [accessed on 8 July 2015]; H. Steyne, 'Stinking Foreshore to Tree Lined Avenue: Investigating the Riverine Lives Impacted by the Construction of the Thames Embankments in Victorian London', *Papers from the Institute of Archaeology*, 23(1): 13 (2013), 1-11, <<http://www.pia-journal.co.uk/articles/10.5334/pia.429/>> [both accessed 21 August, 2015].

<sup>32</sup> For a discussion of habitat compensation under the EU's Birds and Habitats Directives, see: A. Grant, 'Restoration and Creation of Saltmarshes and Other Intertidal Habitats' <<http://www.uea.ac.uk/~e130/Saltmarsh.htm>> [accessed 9 July 2015].

<sup>33</sup> See e.g. S. Lavery, and B. Donovan, 'Flood risk Management in the Thames Estuary Looking Ahead 100 years', *Philosophical Transactions of the Royal Society of Arts*, 363:1831 (2005), 1455-74; M. Stallworthy, 'Sustainability, Coastal Erosion and Climate Change: An Environmental Justice Analysis', *Journal of Environmental Law*, 18:3 (2006), 357-73; History of Marine Animal Populations (HMAP) (Oceans Past and Future/Census of Marine Life, 2000-2010) project at <<http://www.coml.org/projects/history-marine-animal-populations-hmap>> [accessed 9 July, 2015]; J.W. Bolster, 'Opportunities in Marine Environmental History', *Environmental History*, 11:3( 2006), 567-97; A. Armstrong and H.A. Bulkeley, 'Micro-hydro Politics: Producing and Contesting Community Energy in the North of England', *Geoforum*, 56 (2014), 66-76. For the recent merging of maritime and marine environmental history, see: G. O'Hara, *Britain and the Sea since 1600* (2010), Chapter 1.

<sup>34</sup> On positivism, see e.g. Liz Sharp, et al. 'Positivism, Post-Positivism and Domestic Water Demand: Interrelating Science Across the Paradigmatic Divide', *Transactions of the Institute of British Geographers*, 36:4 (2011), 501-15.

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<sup>35</sup> e.g. the work of Luckin and Hamlin, n. 2. A. Smith, A. Stirling and F. Berkhout, 'The Governance of Sustainable Socio-Technical Transitions', *Research Policy*, 34:10 (2005), 1491-1510; V. Taylor, et al, 'Drought is Normal: The Socio-Technical Evolution of Drought and Water Demand in England and Wales, 1893–2006', *Journal of Historical Geography*, 35:3 (2009), 568–91; S. Guy, et al. *Shaping Urban Infrastructures – Intermediaries and the Governance of Socio-Technical Networks* (2011).