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## **Watershed Democracy or Ecological Hinterland? London and the Thames River Basin, 1857-1989\***

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### **I Introduction**

This chapter examines the changing relationship between London, the Thames and upstream communities during a time of fundamental change. The 1973 Water Act replaced local water undertakings in England and Wales with large regional authorities organised around river basins. In London, powerful bodies responsible for water supply, sewerage and pollution control ceded these functions to a new Thames Water Authority.<sup>1</sup> The move to river-basin management sparked widespread protest about the loss of local democracy here and elsewhere. Debates around these key urban functions had been central to London's political life since the early nineteenth century. A strong body of urban and public health history addresses earlier debates, but little attention has been paid to the historical implications of this new regional development even within discussions of a late twentieth-century "decline of urban governance."<sup>2</sup> This radical shift deserves examination, both for its implications for democratic governance and for the ways in which rivers and communities in the Thames region were reconceived during this time.

Two main issues are addressed. The first concerns the relationship between London and the rural and urban communities of the upper Thames – part of the capital's "ecological hinterland."<sup>3</sup> Did the move towards integrated river basin management balance resources more evenly across the 5,000 square mile Thames catchment? Or did it allow for London's greater dominance, in the context of long-standing tensions between London and upstream communities? The second concerns the impact of regional, technocratic river management on localised democratic governance in London and across the region. Was a cohesive Thames region achievable or desirable? Is there any scope for seeing this Thames catchment or "watershed" as "the natural home of democracy" of Donald's Worster's vision? Or did this

development “hollow out” political processes in the Thames region, resulting in what Oliver Graefe has called a “post political environmental region”<sup>4</sup>

A “spatial mismatch” between local government boundaries and the complex interdependencies of large urban spaces has been noted.<sup>5</sup> But the boundary-crossing nature of rivers presents particular challenges for governance. Rivers provide a vivid example of the way cities are connected to their economic and ecological hinterlands and “involuntary neighbours” by flows of water, sewage, pollution and refuse, as well as trade. They force you to look beyond what Barry Doyle has referred to as the ‘sealed’ boundaries of local governments.<sup>6</sup> This study of the shifting relationship between a city and its river basin aims to expand the terrain of urban history.

In critical analyses of the UK water industry, the rise of river-basin management from the 1970s has been associated with the erosion of local democracy – a development seen as completed by water and sewerage privatization in 1989. This period saw the death of a long-established connection between water ratepayers and rights to representation in relation to local authority undertakings. (In Britain, domestic water rates were linked to property values, like other local taxes, rather than to metered consumption.) Castro, Kaika and Swyngedouw express an influential view (referring to developments up to 1983): “[t]hese measures significantly reduced the public accountability of water management . . . , which increasingly became the preserve of a techno-scientific and managerial elite.”<sup>7</sup> Understanding the impacts of regional managerialism on democratic processes requires further investigation of what public accountability meant before these developments.

The mercurial quality of ‘democracy’ – its diverse and contested meanings across water sectors in different contexts – complicates this discussion. In the US, for example, researchers have looked at the promise and failures of popular participation in river basin management, from the visionary nineteenth-century watershed movement to the ‘grassroots democracy’ claims of the Tennessee Valley Authority (established 1933), alongside assessments of current arrangements. There has been no comparable historical exploration of river basins in the UK, though public participation has become a focus within social science literature on natural resources management.<sup>8</sup> Since the expansion of piped domestic water in nineteenth-century Britain, conflicts over democracy in water supply have involved broadly two issues. Firstly, debates have concerned rights to water use, including access to clean, sufficient water at an affordable and fair price, just allocation of water resources, and a say in water conservation decisions for example over the siting of reservoirs. Secondly, debates have

centred on modes of governance and the best means of securing these rights – frequently identified with forms of public ownership of water, and with local government representation of water consumers' interests.<sup>9</sup> Debates around the River Thames, too, were infused throughout this period with notions of the river as a public resource. But democratic claims around water and river management have long been contested: supporters of public ownership and representation have battled with those advocating private ownership and expert-led management. The 'public' itself has included a multitude of conflicting interests. A narrative of lost democracy in discussions of UK river-basin management may have relied on idealized versions of earlier structures of representative local democracy and public accountability. There have always been significant problems with public access to decision-making for rivers and water resources. The Thames catchment in the twentieth century was a tangle of statutory and non-statutory agencies, "blurred accountabilities" and "'backroom' ... consultations"<sup>10</sup> involving national government, semi-representative public bodies, industry associations, local authorities, and interest, amenity and community groups. This chapter traces an evolution from nineteenth-century calls for catchment boards to river-basin management in the 1970s, and the severance of local links to water and river services that followed. It ends with a brief discussion of water privatisation in 1989, which further complicated the regional picture. To what extent did the re-organisation of water and river management from local to regional units transform political space?

## II London and the Nineteenth-Century Thames

<insert Table 1 about here>

Table 1 indicates the changing governance structures for three stretches of the Thames from 1850 to 2000: the freshwater river, the tidal river in London and the estuary downstream. A range of public and commercial bodies was responsible for river-related functions, including navigation, the port, conservancy, pollution control, water supply, sewerage, land drainage, flood protection, fisheries, recreation and riverside development. The Thames Conservancy was the first of its kind, established in 1857. A semi-representative body comprised of sectional interests and key local authorities, it was responsible for navigation and conservancy on the Thames from its Gloucestershire source to the sea (after 1909, up to the tidal limit at Teddington). The 1850s also saw the first city-wide authority for London, a new tier above local authorities: the Metropolitan Board of Works, with responsibilities for

sewerage, land drainage and flood protection. This was replaced in 1889 by the more powerful London County Council (LCC). “Water London,” an area extending beyond LCC borders, was supplied by eight private water companies. Water supply, sewerage and pollution were integral to the “London Government Problem.” How was London’s growing population to be governed and supplied? Who should own and control its utilities? How should power be balanced between metropolitan and local government, and between London and outlying areas?<sup>11</sup> Water featured prominently in “Progressive” Liberal campaigns of the 1890s, calling for public ownership of supply and control by the LCC as a democratic body. When water was made public in 1904, however, it was transferred to a “public corporation” – the Metropolitan Water Board (MWB) – with the LCC and other local authorities allocated Board representatives. The LCC was bypassed again in the public takeover of London’s private dock companies through another public corporation: the Port of London Authority (PLA, established in 1909). The PLA managed navigation, conservancy and pollution control on the tidal river. For Progressives in the early 1900s, the opportunity for democratic control of the river's port, conservancy and water supply had already been lost.

From the early years of the twentieth century, therefore, the river and water supply in and around London were managed by bodies that were closely associated with the capital’s political elites but whose public accountability was highly circumscribed. These organisations formed part of a wider, fluctuating pattern of “delegated governance” in Britain. Contemporary criticisms focused on their non-accountability and “particularism,” being structured around representation of particular interests (such as shipowners on the PLA board).<sup>12</sup> Historians of London have also viewed the MWB, PLA and Thames Conservancy in this light. Up to 1973, these organisations sat awkwardly alongside the universalist aspirations of metropolitan government, itself engaged in struggles with local authorities and the public inside and outside its own borders.<sup>13</sup> The river generated conflicts of interest and competing communities that could not be addressed adequately by the forms of public accountability and participation offered by local government or public corporations.

### III Catchments and Communities of Interest

The mid nineteenth century saw the emergence of demands for river catchment conservancy boards in England with a series of parliamentary reports and bills appearing from the 1860s, prompted by concerns over agricultural land drainage and flooding. Drainage problems pitted

upstream against downstream, uplands against lowlands, and agricultural landowners against towns. Conservancy board advocates argued that land drainage should be a collective responsibility funded by local taxes on the grounds of a “community of interest.” At an investigation in 1877, many called for “representative bodies” with control over the “whole water-shed ... of each river.” Upland landowners objected that there was no such community: individuals should manage their own land.<sup>14</sup> The pressure for conservancy boards also represented a growing recognition of the interconnectedness of river and groundwater systems. Those interested in the capital’s water supply talked increasingly of the water lying in the chalk and limestone of the upper Thames region. London’s future water needs were a persistent focus for public debate: the freshwater Thames itself could not meet the needs of a city using over 150 million gallons a day by the 1880s. But interconnectedness created conflicts of interests between communities. As *The Times* put it following a failed scheme to pump water to London from a gravel bed at Dorney, Buckinghamshire, in 1888:

“those who are interested in the land forming the river basins from which our supplies ... are drawn are becoming indignant ... under a system which grew up ... when scientific knowledge concerning the sources of the water which fills our rivers was in its infancy.”<sup>15</sup>

Conservancy boards did not become widely established until 1930, when land drainage and flood protection boards were created for English and Welsh catchments. Their functions were expanded with the creation of River Boards in 1948, then again with River Authorities in 1963 (with the Thames and the Lea Catchment Conservancy Boards surviving this process).<sup>16</sup> Central government was at the same time moving gradually and unevenly towards the amalgamation of water undertakings, greater regional planning and larger local government units, but these were distinct developments: there was no consistent strategic link in the early years between the management of river catchments and land-use development.<sup>17</sup> Well into the post-war period there were divergent strategies for providing water for urban growth, as demonstrated by two separate groundwater schemes in the Thames area.

Firstly, the 1940s saw the MWB's ambitious plan to create an expanded “Greater London Water Area” to increase the available pool of water (Figs. 1 and 2 ). <insert Figs 1 and 2 about here> The area selected (inside the dotted line, Fig 1) roughly coincided with the regional “Greater London” boundaries of Patrick Abercrombie’s post-war reconstruction plan (1944).

The area formed, the MWB emphasized in 1947, “a single hydro-geological unit.” Importantly, this was not the Thames catchment but part of the London Basin, a geological structure covering much of south eastern England; an area said to be “unique” for its abundant groundwater and for being “so favoured economically by having ... supplies naturally and continuously ... delivered ... from a peripheral, sparsely-populated catchment zone into a central, densely-populated district ... .” There was, the MWB suggested, “a considerable ... community of interest and interdependence throughout the area within 30 to 40 miles from the centre of London.” Economies of scale and equalisation of water rates were just two of the promised benefits. At a 1947 government committee considering the plan, Sir Cyril Radcliffe spoke on behalf of water undertakers around London. Radcliffe is better known for his role in a more high profile act of community engineering that year: the partition of India. Here he challenged MWB’s claims about a “natural area” with “one community.” Despite regional planning developments, he said, there were still “many communities ... run as separate communities.” It was clear to see that the area was centred on London.<sup>18</sup>

It was, however, the scheme's governance that split the committee. The majority favoured separate divisions led by boards representing local authorities; the minority, a single authority with an expert committee. London boroughs sought representative management on the basis that “water supply is not so much a public utility ... as a public health service.” Under Labour leader Lord Latham, the LCC backed the small, appointed committee: water was “a service largely of a technical and 'commercial' character akin to those of electricity and passenger transport,” at that time being nationalised. The Ministry shelved the matter pending the Labour Government’s (unrealised) water nationalisation plans.<sup>19</sup> The London Basin scheme was divided, then, both by competing claims over resources and by conflicting views of the nature of water – divisions that were to resurface in the 1970s. The LCC’s position indicates the distance it had travelled from its early campaigns for public control of water.

This was followed by a less grandiose plan that represents a significant shift towards a catchment approach. The Thames Conservancy had been surveying groundwater in the upper Thames since the late 1950s, after a reservoir proposal had been blocked by local opposition. Their borehole scheme, co-sponsored by the MWB, was officially announced following the 1963 Water Resources Act. Through a system of “stream flow augmentation,” groundwater was to be pumped into tributaries such as the Kennet and Lambourn to supplement the flow of the Thames towards London. The scheme aimed to offer an additional 200 million gallons

a day, and was promoted as cheaper and more economical in land-use terms than surface reservoirs, but it created numerous conflicts around community entitlement to groundwater.<sup>20</sup>

<insert Fig 3 about here>

Significantly, these were more piecemeal conflicts than the opposition to the earlier MWB plan. When the “Lambourn Pilot Scheme” was announced in 1965, the local water board and farmers around Newbury objected that local rivers would dry out. Lord Hurd, a leading Berkshire landowner, objected to the plan as “an intrusion”, calling for “a competent body of local people sitting with the committee considering the pilot.” Thames Conservancy pointed out publicly that Berkshire already had a member on their board, but there were opportunities for “backroom consultations” with powerful vested interests: local National Farmers Union members gained financial compensation, and the Lambourn Scheme went ahead in 1965. The full-scale “Thames Ground Water Scheme (Stage I)” began after a public inquiry in 1972 and was rolled out by the newly formed Thames Water Authority (TWA). Further public inquiries followed the announcement of the scheme’s expansion in the Cotswolds (1980) and at Gatehampton, Berkshire (1987), currently ‘the largest ground water abstraction project in Europe’.<sup>21</sup>

The Thames Ground Water Scheme indicates both the momentum that could be gained with official sanction and the growing importance of river basins for regional plans. Sub-catchments increasingly lost out to river basins; urban hotspots identified in regional plans shaped the priorities and outcomes of public inquiries. The mid 1960s also saw a shift in the balance of power between riparian owners (with customary abstraction rights) and water agencies. Under the 1963 Water Resources Act, abstractions for private supplies were now to be licensed by River Authorities with new powers to develop water resources.<sup>22</sup> A plan to augment supplies for Swindon, Wiltshire, in the 1950s and ’60s illustrates these changes.

When in 1957 the Borough of Swindon sought to pipe groundwater from the rural parish of Axford in the Kennet valley (around 16 miles to the south), it met strong opposition from the local landowners, fisheries interests and residents of the Kennet Valley Protection Association (KVPA).<sup>23</sup> Swindon’s application was tacitly supported by Thames Conservancy, who had a long-standing policy of opposing exports beyond the catchment while allowing transfers across sub-catchments.<sup>24</sup> The KVPA’s consultant geologist challenged the validity of this policy, pointing out that water piped to Swindon would return not to the Kennet but to the Thames (via the River Ray):

“[t]he Kennet is entirely a Chalk-stream, and the removal of its water (or that of its catchment area) to a part of the Thames drainage-system that comes from ... the Jurassic rocks, involves an unreplaced loss of water from the Chalk area.”<sup>25</sup>

The Axford community were up against the regional plans of central government – Swindon was a major growth town – and a public inquiry went against the Association. When Lady Burdett-Fisher (a KVPA member with watercress beds) refused permission for the borehole to be sunk on her land, Swindon used powers acquired under the 1948 Water Act to proceed. An abstraction of 13.1 megalitres a day was licensed in 1965 (Fig 4).<sup>26</sup> <Fig 4 near here>

The development of multi-functional river-basin agencies was not inevitable even at this stage, however. In preparing the Water Resources Bill in the early 1960s, government officials had struggled to address the anomalous historic position of the Port of London Authority (PLA) as pollution authority for the tidal Thames and considered transferring its powers to the Thames Conservancy. While this would have created a single authority for the river (bringing the Thames into line with other rivers), it would also

“have the effect of uniting two areas with little or no common interest and ... producing a large majority representing urban London, an area which would have little concern with some of the authority’s principal interests – land drainage and fisheries – but would be the chief source of river pollution.”

“[T]he difficulties of establishing a satisfactory river authority for the whole Thames basin,” were considered “quite without parallel.”<sup>27</sup> Within ten years, however, the multi-functional single authority approach had been established nationwide.

#### IV Democracy, Local Government and River Basins

Under the 1973 Water Act, river, water and sewerage agencies in England and Wales were absorbed into ten multi-functional Regional Water Authorities (RWAs). Thames Water Authority (TWA) took over ten water undertakings and 163 sewerage operators.<sup>28</sup> The Act represented both a long-term trend towards larger units in water and sewerage governance, and a radical policy shift. Its key purpose, as Jordan et al have shown, was the integration of water quality and supply management at a time when the industry was turning to water re-use as the principal method of expanding



water resources to meet escalating demand. Sewerage agencies were expected to prioritise effluent treatment more effectively if also responsible for water quality and supply.<sup>29</sup> But the shift to river-basin scale had as much to do with a wider move towards regionalism – with precedents in the 1940s energy nationalisations – as with hydrological imperatives. River catchments were not in themselves inevitably the optimal scale for water services. As his department prepared to report on water reform in 1968, Labour’s local government minister Lord Kennet noted that:

“too much stress should not be laid on the importance of integrated river basin management; there were many river basins in England and Wales, but only three represented distinctive large areas, and therefore it was not feasible ... to think of taking river catchments as the sole determinant ... .”<sup>30</sup>

Once the principle of regional authorities had been established, their boundaries were decided on distinctly “hydrosocial” grounds in relation to land-use planning. As an official noted in 1971: “Given a minimum level of financial strength the significant criteria for determining the boundaries ... seemed to be population and, to a lesser, extent, area.” London was part of the “‘central deficiency zone’ of south east England.” The decision to make the Thames stand alone, however, rather than merge with the river authority to the north – though desirable in unifying the ‘South Eastern Planning Region’ – was to avoid creating “an unwieldy and too powerful South Eastern regional body.” TWA was the only single-catchment RWA.<sup>31</sup>

Alongside questions of scale and efficiency, Ministry officials also had to consider public reactions to terminating local government's traditional environmental functions. The 1969 Kennet Report implied that for local democracy the horse had already bolted:

“bearing in mind that water operations are subordinated to planning ... , there is not much scope for local democracy in what are primarily technological matters, and ... it cannot be seriously maintained that local democracy nowadays functions in this field significantly in practice. It is on conservation ... that local authorities’ and the public’s interest principally centres ... . But geography prevents local authorities being responsible for conservation.”<sup>32</sup>

Another report stated that “in large matters of this kind decisions will always effectively be taken by central government and not by river authorities.”<sup>33</sup> Jordan et al have noted the extent to which the reformers relied on assumptions of local authority inefficiency and on management models provided by electricity and gas. These deliberations demonstrate, too, the silencing of political questions about water resources by references to ‘technological matters’ and ‘geography’.<sup>34</sup> Official policy initially settled on small, managerial RWA boards but this underestimated the effect of a transformation on this scale which generated widespread opposition. The pre-1973 water industry was a mixed economy of public and private undertakings. Discussing in 1971 whether to replace water and sewage undertakings with multi- or single purpose authorities, civil servant Jack Beddoe considered it “doubtful whether either solution will create much general public interest.” “Only last year,” he noted, “five local authority water undertakings transferred to a statutory company in Essex without a vestige of public interest.”<sup>35</sup> But the “gigantic” scale of the authorities and the rupture of localised provider/consumer relations were the problem for many, alongside questions of ownership. The Conservative Government’s decision to retain private statutory water companies while replacing public undertakings fuelled cross-party clashes.<sup>36</sup>

Among the most vocal of local government bodies opposing the plans was the Greater London Council (GLC), created in 1965 with an area five times larger than the LCC, who insisted on the ‘special circumstances of London.’ “London’s river,” GLC leader Sir Desmond Plummer wrote to the Environment Minister, was “an absolutely fundamental part” of the Council’s environmental planning. It was “inconceivable” that the “river and the water services which affect every Londoner personally should be managed by some other unelected authority,” when the city provided “70% of the population and financial base.” As “the natural choice of organisation”, the GLC had two proposals. Their suggestion of a GLC-run river basin was rejected by the Minister on the grounds that for the GLC to manage “water services in ... [an] extensive rural area and in towns like Banbury and Cirencester” would “from the point of view of ... overall democratic control, .... be much inferior to the original proposal.” Their alternative, a “London Regional Water Authority” for the catchment of the tidal river below Teddington, did not address the need to expand London's supplies.<sup>37</sup> The TWA was established as a separate organisation, though the GLC gained river amenity functions, justified by the Government on the grounds of “the unique position of the River Thames as a national rather than a purely local, asset.”<sup>38</sup> The major frustration for the reformers nationally, in failing to transfer land drainage to RWAs, also affected London. The

GLC retained land drainage and flood defence for the Thames and other “main metropolitan water courses.”<sup>39</sup>

In promoting the river basin as the "natural" unit for water management, the 1973 Act de-naturalised the relationship between local authorities and environmental functions that had become integral to their role. Local government links with water and sewerage proved politically impossible to sever altogether at this point, however. A compromise allowed for a majority of local authority representatives on the RWAs, though as Keating and Rhodes have said, this created a fundamental ambiguity: representatives were expected to “discard local interests” which were also their “distinctive contribution.” Labour Member of Parliament Dennis Howell later pointed out that: “[t]he great difficulty created by the Water Act ... was that it was not based on any known unit of democratic accountability.” Peter Black, TWA Chairman and GLC Conservative, tried to sound optimistic in 1978, referring to central government edicts:

“Despite the problems which will arise, the authority believe that the unique constitution of water authorities – part nationalised industry/part local government – ensures that they can respond wisely.”<sup>40</sup>

The exclusion of local authorities from water, sewerage and river management was finally accomplished by the 1983 Water Act, which ended statutory local authority representation on RWAs and implicitly re-framed water citizens as customers through the establishment of Consultative Consumer Committees. In 1984 TWA Chairman Roy Watts, who steered the authority to privatisation, introduced the new appointed board as a seamless evolution. With 15 members (replacing 62), it was

“more independent and ... intended to add to the *basic and unchanging requirements of continuously improving service to customers*, an even greater pursuit of efficiency as well as some of the disciplines of the market place. It seeks to deal only with policy, strategy and performance monitoring and to do so without the proliferation of Committees which marked the previous arrangements.”<sup>41</sup>

The GLC itself was abolished in 1986 and its land drainage, flood protection and river amenity functions transferred to the TWA.<sup>42</sup> At this point London's formal political relationship to the Thames environment was lost.

The rise of river basins, then, contributed to the decline of long-standing local and metropolitan government functions. RWAs reflected a new managerial imperative that also saw the removal of the GLC and other bodies from the PLA board during these years. They facilitated increasing central government control: historian Asok Mukhopadhyay called them the "the regional arms of Whitehall".<sup>43</sup> The democratic structures of local and metropolitan government, however, had never been sufficient either for the boundary-crossing nature of rivers or for competing interests between river users, riparian owners, water consumers, amenity and environmental groups. Conflicts around water and river rights have been a breeding ground for interest groups emerging in the gaps between formal routes for public participation and accountability.

## VI Civil Society, Governance and the Thames

Some civil society organisations sprang from the closure of formal representative channels. After GLC abolition some of its leading members and officials sought to influence policy for the river, docks and riverside through the London Rivers Association (1986-2007). Numerous local organisations were mobilised by the closure and commercial redevelopment of London's up-river docks in the 1970s and '80s, as central government transferred the planning powers of riparian boroughs to the London Docklands Development Corporation (LDDC, 1981-1998).<sup>44</sup> But interest groups have a longer history in the Thames region. Sometimes they were a response to crises. Severe flooding in East Molesey, Surrey, in 1968 prompted action from the Molesey Residents Association (1965-) and the Flood Victims Campaign.<sup>45</sup> The River Thames Society (1962-) and Thames Planning and Amenities Forum (TPAF) (1965-96) represent more long-term engagement with planning and recreational issues and pressure for statutory protection. The River Thames Society supported GLC bids for continuing membership of the Port of London Authority board in the 1960s and early '70s, to promote neglected amenity interests on the tideway. TPAF, representing both local authorities and amenity groups, for a time sought planning authority status to provide a "wide vision for the whole river."<sup>46</sup>

After the formation of RWAs in 1974, civil society groups continued to produce collective responses to problems of river and water management. TPAF and the Cotswolds River Action Group opposed TWA's plan to increase abstractions from the Cotswolds limestone at a public inquiry in 1980. Most vocal was TPAF member Frederick Freeth, Wiltshire County Council's "rebel" on the TWA. But the river basin has proved a problematic scale for popular protest. The persistence of localised pressure groups and, especially in recent years, the proliferation of tributary or sub-catchment organisations suggests that social activism is still more readily mobilised at local level. But the context for such organisations is crucial: for all this vibrant local activity, the ability to affect decisions has been highly variable between different groups and over time.<sup>47</sup>

Recent literature on "multi-level governance" provides a framework for considering changing forms of political engagement along the Thames and its tributaries in the context of a shifting relationship between civil society and the state. The years following the Conservative election victory in 1979 have been widely associated with the death of consensus over the role of the state in welfare and other services in the UK, the decline of local government and the transfer of key state functions to the market-place and civil sphere. Geographical and political science literature has explored a shift "from government to governance," implying a move away from fixed representational modes of government towards a range of new institutions, public-private partnerships and networks at local level. "Re-scaling" is central to these discussions and several, sometimes contradictory, trends have been identified: "scaling-up," suggesting both the loss of local powers to central government and the erosion of national sovereignty by Europe; "scaling-out," entailing the transfer of public services to the market-place but also greater involvement of "non-state actors" (commercial bodies, stakeholders, interest groups) in decision-making; "scaling-down," including an expanded role for local groups.<sup>48</sup>

Water and sewerage privatisation in England and Wales in 1989 "scaled-out" key regional functions to the market. It also led, however, to unprecedented levels of national regulation for water resources and rivers, with an economic regulator (OFWAT) and two environmental regulators: the National Rivers Authority (Environment Agency since 1996) and Drinking Water Inspectorate. Environmental concerns have been tied to market mechanisms within this framework. Increasingly, too, environmental expertise was internalised within water agencies, with important consequences for the management of pollution, abstraction, land drainage, flood risk and ecologically sensitive sites.<sup>49</sup> River-basin management has coincided

since the late 1970s with the "scaling-up" of regulation for rivers and water: European Union environmental directives have been powerful drivers in expanding national regulation, especially since privatisation, also providing potential supra-national pathways for local activists. Tower Hamlets Federation of Tenants in east London cited the Drinking Water Directive when in 1986 they successfully complained to Europe over nitrate levels in their TWA supply. The Water Framework Directive (WFD, 2000) has required the production of river-basin management plans, introduced targets for the "ecological status" of rivers, and obliged member states to "encourage the active involvement of all interested parties," implying a degree of unspecified "scaling-down".<sup>50</sup>

The ongoing controversy over Axford illuminates some important changes in the role of civil society organisations over time. Since the 1950s the River Kennet has been a site of conflict between the perceived interests of water consumers and those interested in the Kennet as an environment, amenity and local resource.<sup>51</sup> The private water users and amenity interests of the Kennet Valley lost out to Swindon's consumers in the 1960s. Despite influential local support, they lacked the resources of Swindon Borough backed by Thames Conservancy and central government's regional policies. When leading consultant engineers declined to advise them, they resorted in 1959 to a water diviner to try to find alternative water sources for Swindon. Swindon officials pronounced confidently on the likely impacts of the abstraction:

"[t]here should be little or no effect in Kennet river as there appeared to be no direct communication between the water in the underground formation and the water in the river."<sup>52</sup>

Over 50 years later, the Axford pumping station continues to be controversial, however. The impacts of groundwater abstraction on rivers are now acknowledged to be imperfectly understood. In the 1990s the Environment Agency (EA) and Thames Water (by then a private company) clashed over the renewal of Axford's abstraction license. Following the grant of a new temporary license in 2008, a joint study by Thames Water, EA and Natural England (another government agency) is said to have concluded that "abstraction was contributing to low flows but, due to the complex nature of the systems, it was difficult to demonstrate specific evidence of direct adverse impact on the environment."<sup>53</sup> A new local organization, Action for the River Kennet (ARK), has campaigned against deteriorating river conditions since 1990, calling for an end to the abstraction. They have worked in recent years with influential environmental NGOs such as the Royal Society for the Protection of Birds and World Wildlife Fund (WWF), as well as the statutory EA and Natural England. A current

policy of reducing Swindon's reliance on Axford is tied to pressure for the Kennet to reach "good ecological status" under the EU's WFD.

## Conclusion

Today's more porous borders between the civil and statutory spheres in river and water management highlight the brittle separations of earlier decades. Oppositional groups today have levels of access to information on water policy that would have been unthinkable in the 1960s. The WFD's ecological benchmarks for rivers underpin a re-appraisal of sub-catchments in the Thames basin and elsewhere.<sup>54</sup> This situation currently hinges on a tense balance between the EU, national government and the regulatory agencies it funds. The rise of influential environmental NGOs – with expertise and access to national and international policy circles – has played a crucial role in shaping the changing regulatory landscape.<sup>55</sup>

River basins in England and Wales are neither watershed democracies nor post-political. They are the product both of their regulatory contexts and of the range of official and unofficial participatory avenues open to different groups at any given time. The impacts of river-basin management on political space in the Thames region between the 1960s and 1980s were not straightforward. London's political institutions undeniably lost both decision-making powers and the symbolic power conferred by environmental management of the river. The opening of the GLC's Thames Flood Barrier in 1984 just before abolition symbolizes the abrupt end. In terms of the allocation of water resources, however, London and other key towns were the winners in the Thames catchment during this period, with expanded ecological hinterlands. The localised priorities of less populated rural districts in the catchment were downgraded. It remains to be seen what effect Defra's recent [sub-] "catchment based" initiative has on this local/regional balance.<sup>56</sup> While localized communities of interest were subsumed within new regional divisions, new communities of interest have continued to emerge in the civil sphere.

During the heyday of "representative" management up to the 1960s, there was frequent criticism of the river's fragmented governance and the failure to represent a full range of interests and communities. The potential for competing interests along the river is as strong as ever, and the uneven battle between the priorities and resources of local interest groups and those of central government remains a key problem for environmental citizenship. The power of different groups is still tied to their consonance with official policies. The government can

do much to change the balance of central/local power at any time.<sup>57</sup> But this is not a story of rivers lost to their citizens. The emergence of greater consensus over environmental issues combined with an expanded regulatory structure and more powerful activist organisations has shaped new modes of participation and accountability for rivers that exceed what was on offer from representative local bodies up to the 1970s. However technocratic much current discussion and literature on river basins undoubtedly is,<sup>58</sup> public pressure continually bubbles up through civil society organisations and the tactical use of political and legal avenues that are now more widely available. River basins are not (yet) the cohesive engines of governance that the water reformers of the 1970s may have been hoping for. Fragmentation of decision-making processes for the Thames and its catchment remains an obstacle to effective action but – especially in a "multi-level" context – it also provides valuable space for political contestation.

## ENDNOTES

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<sup>1</sup> For more on the Water Act, see Section IV.

<sup>2</sup> W.J. Luckin, *Pollution and Control: A Social History of the Thames in the Nineteenth Century* (Bristol: Hilger, 1986); Christopher Hamlin, *A Science of Impurity: Water Analysis in Nineteenth Century Britain* (Bristol: Hilger, 1990); Richard H. Trainor, "The "Decline" of British Urban Governance Since 1850: A Reassessment," in *Urban Governance: Britain and Beyond Since 1750*, eds. Robert J. Morris and Richard H. Trainor (Aldershot: Ashgate, 2000), 47-68.

<sup>3</sup> On ecological hinterland, see e.g.: Graham Haughton, Ian Rowe and Colin Hunter, "The Thames Gateway and the Re-Emergence of Regional Strategic Planning: The Implications for Water Resource Management," *The Town Planning Review* 68 (1997): 407-22.

<sup>4</sup> Donald Worster, "Watershed Democracy: Recovering the Lost Vision of John Wesley Powell," *Journal of Land, Resources, & Environmental Law* 23 (2003): 65; Olivier Graefe, "River Basins as New Environmental Regions? The Depoliticization of Water Management," *Procedia – Social and Behavioral Sciences* 14 (2011): 26; David Marquand, *The Decline of the Public: The Hollowing Out of Citizenship* (Cambridge: Polity, 2004).

<sup>5</sup> e.g. Neil Brenner, "Metropolitan Institutional Reform and the Rescaling of State Space in Contemporary Western Europe," *European Urban and Regional Studies* 10 (2003): 299.



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<sup>6</sup> David Kinnersley, *Troubled Water: Rivers, Politics and Pollution* (London: Hilary Shipman Ltd, 1988), 2; Barry M. Doyle, introduction to *Urban Politics and Space in the Nineteenth and Twentieth Centuries: Regional Perspectives*, ed. Barry M. Doyle (Newcastle: Cambridge Scholars Press, 2007), 15.

<sup>7</sup> José E. Castro, Maria Kaïka and Erik Swyngedouw, "London: Structural Continuities and Institutional Change in Water Management," *European Planning Studies* 11 (2003): 287. See also n. 60.

<sup>8</sup> Donald Snow, "The Persistence of Powell: The Idea of Watersheds and Participatory Democracy," *Journal of Land, Resources, & Environmental Law* (2003): 31-40; Erwin C. Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton: Princeton University Press, 1994). See, however: François Molle, "River-Basin Planning and Management: The Social Life of a Concept," *Geoforum* 40 (2009): 484-94; W.A. Maloney and J. Richardson, *Managing Policy Change in Britain: the Politics of Water*, (Edinburgh: Edinburgh University Press, 1995). Judith Petts, "Learning about Learning: Lessons from Public Engagement and Deliberation on Urban River Restoration," *The Geographical Journal* 173 (2007): 300-311

<sup>9</sup> Vanessa Taylor and Frank Trentmann, "Liquid Politics: Water and the Politics of Everyday Life in the Modern City," *Past and Present* 211 (2011): 199-241; John Sheail, "Government and the Perception of Reservoir Development in Britain: An Historical Perspective," *Planning Perspectives* 1 (1986): 45-60.

<sup>10</sup> Matthew Flinders, 'MPs and Icebergs: Parliament and Delegated Governance', *Parliamentary Affairs* 57 (2004): 768; Ben Pimlott and Nirmala Rao, "Metropolitan Miasma: Blurred Accountabilities in the Governance of London," *The London Journal* 29 (2004): 33-45. Ben Page, "Results of the Case Study on the Water Supply in the Region of London, UK", Appendix to Hubert Heinelt et al, *Final Report: Achieving Sustainable and Innovative Policies through Participatory Governance in a Multi-level Context* (EU Project No. HPSE-CT-1949-00028, 2002), 232.

<sup>11</sup> John Davis, *Reforming London: The London Government Problem, 1855-1900* (Oxford: Clarendon Press, 1988); John Davis, "London Government 1850-1920: The Metropolitan Board of Works and the London County Council," *The London Journal* 26 (2001): 47-56; Bill Luckin, "The Metropolitan and the Municipal: The Politics of Health and Environment in London, 1860-1920," in *Cities of Ideas: Governance and Citizenship in Urban Britain*, eds. Robert Colls and Richard Rodger (Aldershot: Ashgate, 2004), 46-66.

<sup>12</sup> Flinders, "MPs and Icebergs," 771. William Robson, *The Government and Misgovernment of London* (London: Allen & Unwin, 1939), 114-20, 135-8.

<sup>13</sup> Luckin, "Metropolitan and the Municipal," 66; James Gillespie, "Municipalism, Monopoly and Management: The Demise of 'Socialism in One County', 1918-1933," in *Politics and the People of London: The London County Council 1889-1965*, ed. Andrew Saint (London: The Hambledon Press, 1989), 105, 109; Stephen Inwood, *A History of London* (London: Macmillan, 1998), 709. For public participation, see also: A. Skeffington, *People and Planning: Report of the Committee on Public Participation in Planning* (London: HMSO, 1969); John Davis, "'Simple Solutions to Complex Problems: The Greater London Council and the Greater London Development Plan, 1965-1973," in *Civil Society in British History: Ideas, Identities, Institutions*, ed. José Harris (Oxford: Oxford University Press, 2003), 249-74.

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<sup>14</sup> J. Abbernethy evidence, 1877 (371) *Report from the Select Committee of the House of Lords [HL] on Conservancy Boards, &c*, 1877, Q. 423. Mr Pugh, “River Conservancy and Floods Prevention Bill”, House of Commons [HC] Debate, Hansard, Vol. 260, cc. 958-962, April 7, 1881.

<sup>15</sup> “The Water Supply of London,” *The Times*, July 19, 1892, 8. See also: J. Prestwich, *A Geological Inquiry Respecting the Water-bearing Strata of the Country around London ...* (London: 1851); “Mr. Bailey Denton’s Plan,” 1868-69 [4169] Royal Commission on Water Supply, Report, Part II, No. 68; R. Etheridge, “On the Rivers of the Cotteswold Hills ... as Supply to the Main River and the Metropolis,” *Proceedings of the Cotteswold Naturalists’ Field Club*, 11 Part 1 (1892-93): 49-101; John Broich, “London’s and Surrey’s ‘Fight for the River’: Politics, Perceptions and the Thames, 1897,” *Surrey History* VI (2000): 75-90; John Sheail, “Underground Water Abstraction: Indirect Effects of Urbanization on the Countryside,” *Journal of Historical Geography*, 8 (1982): 395-408. For an 1894 Thames basin map see: “Researching the River Thames” website, accessed November 14, 2015, <http://www2.gre.ac.uk/about/faculty/ach/research/centres/maritime/research/case-studies/runningriverthames/timeline/maps/river-thames-and-thames-basin>.

<sup>16</sup> Elizabeth Porter, *Water Management in England and Wales* (Cambridge: Cambridge University Press, 1978), 19-23.

<sup>17</sup> John Sheail, “Planning, Water Supplies and Ministerial Power in Inter-War Britain,” *Public Administration*, 61 (1983): 386-95; John Hassan, “The Water Industry 1900-1951: A Failure of Public Policy?,” in *The Political Economy of Nationalisation in Britain 1920-1950*, eds. R. Millward and J. Singleton (Cambridge: Cambridge University Press, 1995), 189-211. For RWAs’ failure to integrate with local authority planning: Yvonne Rydin, *Urban and Environmental Planning in the UK* (1993; Basingstoke, Palgrave Macmillan, 2nd edn. 2003), 162-63.

<sup>18</sup> Metropolitan Water Board [MWB], *London’s Water Supply, 1903-1953* (London: Staples Press, 1953), 311-12. TNA: HLG 50/2250: Departmental Committee on Greater London Water Supplies [DCGLWS]: Verbatim Notes 1947: Maxwell Fyfe, March 10, 1947, 6; Sir Cyril Radcliffe: April 21, 1947, 126. HLG 50/2264: DCGLWS: Review of Technical Evidence 1949: MWB, “A Review of the Resources and Consumption of Water in the Great London Area by P.G.H. Boswell,” 4.

<sup>19</sup> TNA: HLG 50/2263: Ministry of Health, *Report of the Departmental Committee on Greater London Water Supplies* (London: HMSO, 1948), 8, 11. HLG50/2261: “DCGLWS. Statement of Evidence by the Metropolitan Boroughs’ Standing Joint Committee” (June 20, 1947), 2; LCC, “Statement of Evidence” [undated], 5. HLG 50/2248: DCGLWS: Report. Memo: Mr Armer to Sir John Wrigley, 7 July 1948; MWB, *London’s Water Supply*, 316. A.K. Mukhopadhyay, “The Politics of London Water,” *The London Journal*, 1 (1975): 212-17.

<sup>20</sup> Glyn, “Water Resources,” HL Debate, Hansard, Vol. 204, c. 99, May 29, 1957; B.J. Hardcastle, “From concept to commissioning,” in *Thames Ground Water Scheme*, eds. ICE (London: ICE, 1978), 5. “Boring may solve London’s water problem,” *The Times*, June 24, 1963, 6; “Topping up the Thames,” *The Times*, February 17, 1967, 2.

<sup>21</sup> *Newbury Weekly News*, October 28, 1965, 22; Letter from Richard Nugent, *The Times*, October 8, 1965, 13; Letter from Lord Hurd, *The Times*, October 7, 1965, 13; “Water Plan for London makes Farmers Angry,” *The*

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*Times*, October 23, 1965, 5; “Correction,” *The Times*, October 27, 1965, 12; “Opening Address,” in *Thames Ground Water Scheme*, eds. ICE, 2-3; Cirencester Public Inquiry 1980: *The Wilts and Gloucestershire Standard*: June 27, 1980, 1; December 5, 1980, 1. “No. 2007 Water, England and Wales, The Thames Water Authority (Gatehampton Farm Boreholes) Order 1987;” “Gatehampton Borehole Upgrade,” accessed November 14, 2015, <http://www.gpsuk.com/casestudy/8/6/gatehampton-borehole-upgrade.html>.

<sup>22</sup> Porter, *Water Management*, 25.

<sup>23</sup> Berkshire Record Office [BRO]: D/EX 423/6/25: Letter from (Secretary) Ministry of Housing and Local Government [MHLG] to Town Clerk, Swindon Corporation, 30 March 1960 [Result of Public Inquiry].

<sup>24</sup> e.g. “Water Supplies of England: Lord Desborough’s Warning,” *The Times*, November 15, 1927, 13; Thames Conservancy, *The Thames Conservancy, 1857-1957* (London: Thames Conservancy, 1957), 46.

<sup>25</sup> BRO: D/EX 423/6/25: Prof. H.L. Hawkins, “Report to the Kennet Valley Protection Association on the Proposal by Swindon Corporation ...” (July 1958), 3.

<sup>26</sup> BRO: D/EX 423/6/25: Letter from (Secretary) MHLG to Town Clerk, Swindon Corporation, 30 March 1960; Note by Godwin, Bembridge and Clifton, 8 June 1959; Water Act, 1948, 11 & 12 Geo 6. Ch. 22, S. 8. For earlier abstractions in the Kennet, see: Atkins W S Consultants Ltd, *Kennet and Coln: River Levels Study Final Report, Volume 1. River Kennet. Report to National Rivers Authority [NRA] Thames Region* (1992). Accessed November 14, 2015, <http://ea-lit.freshwaterlife.org/archive/ealit:3650/OBJ/20001620.pdf>. For key towns: MHLG/Minister for Welsh Affairs, *The South-East Study* (London: HMSO, 1964), “Appendix 1: Water Supplies in South-East England,” 54-59.

<sup>27</sup> TNA: HLG 127/1212: “Report of the MHLG on the Port of London Bill: Preamble” (April 7, 1964),” No. 7.

<sup>28</sup> Castro, Kaïka and Swyngedouw. “London,” 287. The RWAs took on the duties of 1,580 former bodies. Porter, *Water Management*, 28; Daniel A. Okun, *Regionalization of Water Management: A Revolution in England and Wales* (London: Applied Science Publishers, 1977), 147.

<sup>29</sup> Water Resources Board, *Water Supplies in South East England* (London: HMSO, 1966), 11-12; Hassan, *History of Water*, 123-24; A.G. Jordan, J. J. Richardson and R.H. Kimber, “The Origins of the Water Act 1973,” *Public Administration*, 55 (1977), 319-20.

<sup>30</sup> TNA: HLG 127/1073: “Water Reorganisation: Note of a Meeting chaired by Lord Kennet on 10th May 1968,” No. 3(f, g). Local government was also being reconsidered at this time. *Report of the Royal Commission on Local Government* (London HMSO, 1969); Local Government Act 1972, Ch. 70.

<sup>31</sup> TNA: HLG 127/1506: “Implementation of CAWC Report, Note of a Meeting held on 3 March 1971,” No. 2(i); Department of the Environment (DoE), “Water Reorganisation” (undated, c. March 1971), No. 4(iv); “Implementation of CAWC Report. Notes of a Meeting held on 26 Feb 1971,” No. 4(v). For hydrosocial cycles: Karen Bakker, *An Uncooperative Commodity: Privatizing Water in England and Wales* (Oxford: Oxford University Press, 2003), 28-29; Erik Swyngedouw, “The Political Economy and Political Ecology of the Hydro-Social Cycle,” *Journal of Contemporary Water Research & Education* 142 (2009): 56–60. For the construction

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of regions: Allan Cochrane, "Making up a Region: The Rise and Fall of the 'South East of England' as a Political Territory," *Environment and Planning – Part C* 30 (2012): 95-108.

<sup>32</sup> HLG 127/1073: Kennet, "Water Reorganisation," No. 8; MHLG, "Local Government Reform Water Functions and Organisation," April 16, 1969, No. 4 (Memo by M. Stevenson); Lord Kennet, "Water Reorganisation," [Kennet Report] June 1, 1969, Appendix B: "Relationship to Local Government".

<sup>33</sup> TNA: HLG 1271/1073. "Paper 13. Water Organisation: Relationship to Local Government" (undated), Part III, No. 29.

<sup>34</sup> Jordan et al, "Origins of the Water Act," 324. On technology and silences: Bruno Latour, *Science in Action* (Cambridge, MA: Harvard University Press, 1987), 2-3, 21.

<sup>35</sup> TNA: HLG 127/1506: J.E. Beddoe memo, "CAWC Report on the Organisation of the Water industry in England and Wales" (February 1971), No. 17.

<sup>36</sup> e.g. Gloucestershire Archives [GA]: D6804/1/7: Cotswold Water Board Minutes, 1972-74: "British Waterworks Association: Vice-Chairman's Report on Proceedings ... 20th-23rd June 1972," 2; Surrey History Centre [SHC]: 6128/1/84: East Surrey Water Company. *Annual Report and Accounts for the Year ended 25<sup>th</sup> March 1971*, Chairman's Statement, 7. Okun, *Regionalization of Water Management*, 95.

<sup>37</sup> TNA: MT 88/327: D. Plummer (GLC) letter to P. Walker (DoE), February 9, 1972; HLG 29/1244. E. Griffiths (DoE) letter to D. Plummer, August 15, 1972, 1-2. For Greater London and neighbouring boundaries, see PLA 'Port of London Act 1964' map at: 'Researching the River Thames' website, accessed November 14, 2015,

<http://www2.gre.ac.uk/about/faculty/ach/research/centres/maritime/research/casestudies/runningriverthames/timeline/maps/map-of-port,-river-and-greater-London>.

<sup>38</sup> TNA: MT 88/327. "Draft Paragraphs on Water Reorganisation ..." [Lord Greenwood's Speech to River Thames Society, 21 September 1973]; Okun, *Regionalization of Water Management*, 69, 86-88, 148-9.

<sup>39</sup> The GLC was responsible for land drainage in the "London Excluded Area" (approx. 400 m<sup>2</sup> / 1040 km<sup>2</sup>). E.C. Penning-Roswell, D.J. Parker and D.M. Harding, *Floods and Drainage: British Policies for Hazard Reduction, Agricultural Improvement and Wetland Conservation* (London: Allen & Unwin, 1986), 45.

<sup>40</sup> M. Keating and M. Rhodes, "Politics or Technocracy? The Regional Water Authorities," *Political Quarterly* (1981): 488-9; Howell, "Water Authorities (Constitution)," HC Debate, Hansard, Vol. 965, c. 1322, April 4, 1979; Wilts & Swindon History Centre [WSHC]: K7/130/1: Thames Water, *Annual Report and Accounts for the Year ended 31st March 1978*, 5, 41. In 1978 TWA had 57 members: 36 local government representatives (20 from London); 21 government appointees.

<sup>41</sup> My emphasis. [WSHC]: K7/130/1: *Thames Water, Annual Report and Accounts ... for the Year Ended 31<sup>st</sup> March 1984*, 3. For citizens becoming consumers: Bakker, *Uncooperative Commodity*, 26; cf. Taylor and Trentmann, "Liquid Politics."

<sup>42</sup> Local Government Act 1985; Local Government Act 1985 (Land Drainage Functions) Order 1986; Thames Barrier and Flood Prevention Act 1972 (Amendment) Order 1986.

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<sup>43</sup> Jordan et al, “Origins of the Water Act,”: 317-34; Graham Taylor, *State Regulation and the Politics of Public Service: The Case of the Water Industry* (London: Mansell, 1999), 78-80; Bakker, *Uncooperative Commodity*, 60; Mukhopadhyay, “Politics of London Water,” 224; Vanessa Taylor, “Whose River? London and the Thames Estuary, 1960-2014,” *The London Journal* 40 (2015): 252.

<sup>44</sup> Museum of London Docklands [MOLD], Port and River Collection: London Rivers Association papers [Aspinall collection]. Marjorie Mayo, Ines Newman and Nick Sharman, “Rebuilding London’s Docklands: The Strategic Plan – Two Years On,” *Community Development Journal*, 15 (1980): 68; P. Pinch, “Waterspace Planning and the River Thames in London,” *London Journal* 40 (2015): 272-92.

<sup>45</sup> SHC: 3696/19/12: Flood Victims Campaign; 8416: Ember Action Group Papers. See also: Thames Preservation Society (1890s); Underground Water Protection Society (1902); Thames Tributaries Power Users Association (1920s); Pure Rivers Society (1930s).

<sup>46</sup> R. Gresham-Cooke MP, “River Thames,” HC Debate, Hansard, Vol. 749, c. 1225, July 3, 1967. See also: BRO: D/EX 1465, TPAF Records; MOLD: British Ports Association 95: PLA Inquiry, 7, 8, 9 November 1966 (Proposed Revision Order) Verbatim Report: Third Day, RTS evidence (RTS), 10-14: Proposed Reconstitution of the PLA: Public Inquiries and Working Papers (1966-1974) (Box 1.1): Port of London Revision Order Public Inquiry, 22-25 July 1974: Third Day, RTS evidence, 28-29.

<sup>47</sup> *The Wilts and Gloucestershire Standard*: May 2, 1980, 2; June 27, 1980, 1; July 4, 1980, 14; GA: DA22/132/132: TPAF Minutes, 26 June 1968, 1. For river basin protest, see Yorkshire WaterWatch: G. Houghton, “Private Profits – Public Drought: The Creation of a Crisis in Water Management for West Yorkshire,” *Transactions of the Institute of British Geographers* 23 (1998): 419-433. Comparing watersheds and “polycentric ... subwatershed communities of interest”: William Blomquist and Edella Schlagerb, “Political Pitfalls of Integrated Watershed Management,” *Society & Natural Resources* 18 (2005): 101-117. On problems of a “generally applicable typology” for state/non-state actor relationships, see Rydin, *Urban and Environmental Planning*, 116.

<sup>48</sup> J. Kooiman, ed. *Modern Governance: New Government-Society Interactions* (London: Sage, 1993); M. Goldsmith and J. Garrard, “Urban Governance: Some Reflections,” in *Urban Governance*, eds. Morris and Trainor; Nigel Watson, Hugh Deeming and Raphael Treffny, “Beyond Bureaucracy? Assessing Institutional Change in the Governance of Water in England,” *Water Alternatives* 2 (2009): 448-60; Maureen G. Reed and Shannon Bruyneel, “Rescaling Environmental Governance, Rethinking the State: A Three-Dimensional Review,” *Progress in Human Geography* 34 (2010): 646–53.

<sup>49</sup> Bakker, *Uncooperative Commodity*; Jeremy Purseglove, *Taming the Flood: History and Natural History of Rivers and Wetlands* (Oxford: Oxford University Press, 1988).

<sup>50</sup> F. Craig and P. Craig, *Britain’s Poisoned Water* (Harmondsworth: Penguin Books, 1989), 118. EU Water Framework Directive, [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html). For recent consultation on river basin management plans, see: Environment Agency, *Water for Life and Livelihoods: Consultation on the Draft Update to the River Basin Management Plans - Summary Response Document* (2014),

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<sup>51</sup> On post-privatization consumer/environment conflicts: Bakker, *Uncooperative Commodity*.

<sup>52</sup> BRO: D/EX 423/6/25: Borough of Swindon: Proposed Water Abstraction – Kennet Valley. Notes of a Meeting at Civic Offices, Swindon, June 16, 1958; KVPA Minutes, October 23, 1959; Letter from Jepson Turner to KVPA, December 9, 1959.

<sup>53</sup> WWF, *WWF-UK Case Study: The Impact of Over-Abstraction on the River Kennet* (WWF/Natural England, undated; c. 2011), 3, citing “Axford Licence Variation Application, Environmental Report” (Thames Water Utilities Ltd: August 2007), accessed February 9, 2014, [http://assets.wwf.org.uk/downloads/case\\_study\\_kennet\\_final.pdf](http://assets.wwf.org.uk/downloads/case_study_kennet_final.pdf); Water Briefing, “Thames Water Wins Two Year Extraction Licence Extension” (May 9, 2011), accessed February 11, 2014, <http://www.waterbriefing.org/index.php/home/company-news/item/4176-thames-water-wins-two-year-extraction-licence-extension>; <http://www.riverkennet.org/>. See also NRA report at n. 34.

<sup>54</sup> Thanks to Dave Webb, Biodiversity Team Leader, SE Area, Thames Region, EA. Oral History Interview: February 15, 2011.

<sup>55</sup> On NGOs' influence and limits: M. Hilton et al., *The Politics of Expertise: How NGOs Shaped Modern Britain* (Oxford: Oxford University Press, 2013).

<sup>56</sup> For London and the region, see also Castro, Kaïka and Swyngedouw, “London,” 287. 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). Accessed November 14, 2015, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/204231/pb13934-water-environment-catchment-based-approach.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/204231/pb13934-water-environment-catchment-based-approach.pdf).

<sup>57</sup> e.g. LDDC, abolition of metropolitan counties (1986), and recent announcement on fracking: Adam Vaughan, “Government will step in if councils don't fast-track fracking applications,” *The Guardian* (UK), 13 August 2015, accessed August 13, 2015, [http://www.theguardian.com/environment/2015/aug/13/government-will-step-in-if-councils-dont-fast-track-fracking-applications?CMP=Share\\_iOSApp\\_Other](http://www.theguardian.com/environment/2015/aug/13/government-will-step-in-if-councils-dont-fast-track-fracking-applications?CMP=Share_iOSApp_Other).

<sup>58</sup> Hubert Heinelt et al, *Final Report*, 49. Accessed November 14, 2015, <http://cordis.europa.eu/documents/documentlibrary/82608091EN6.pdf>.