

# INTRODUCTION

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On a bitterly cold February afternoon in 2013 a group of international scholars gazed down from the clock tower of Deutsches Museum Munich on the Isar and attempted to spot traces of renaturalization in the concrete straitjacket in which the river runs through the city. This excursion turned out to be a perfect kickoff for a conference that united scholars from a wide range of countries who all had stories to tell about rivers in relation to cities and the interaction between those two so different actors. While the stories the participants told each other over the coming two days were quite different in time frame, location, and drama, they all agreed on one thing: cities and rivers were (and are) intimately linked to each other; they coevolved and shaped each other in a multitude of ways and aspects. Until recently, this interaction has been framed mostly as a story of loss and spoliation: environmental historians have depicted rivers as victims and objects of comprehensive human attempts to colonize and domesticate and to extract as much material value from them as possible in terms of transport routes, energy resources, and “ultimate sinks” for waste material.<sup>1</sup> More recently, however, the focus of historical river research has shifted toward other, less gloomy narratives, and so it seemed to make sense to open such a conference with an excursion that highlighted progress and improvement rather than decline and disaster. This book does analyze the decline and the spoliation, which have clearly been dominant over the last 150 years, but also explores the resilience of rivers, the amazing recovery of aquatic life after water quality has been improved and, last but not least, the cultural reappropriation of rivers by urban societies that rediscover the multiple pleasures and amenities linked with urban water bodies.

Why bother about cities and rivers? Since rivers are such an essential resource for almost all larger (and older) cities, the river-city relationship provides an angle from which to advance comparative urban history with a focus on the relationship of cities to their natural environments.<sup>2</sup> Despite all attempts to domesticate and regulate urban rivers, cities have never comprehensively controlled them, as the long history of recurring floods and other

river-linked disasters clearly shows.<sup>3</sup> Thus, while rivers are an essential conduit of the urban metabolism, they nevertheless constantly (or rather recurrently) remind urbanites that their attempts to control nature and keep it in check could only ever be fragmentary and never entirely successful in the long run. As a consequence, the attempts at stabilizing nature-society interactions and protecting urban citizens from the deleterious effects of riverine dynamics produced a wide range of conflicts and interventions, which yield highly interesting insights into both urban and environmental history.

City-river relations, thus, are a uniquely productive topic and invite a variety of historiographical approaches. The contributions to this volume reflect the heterogeneity and complexity of city-river relations over time. Inviting scholars from different disciplinary backgrounds such as history, architecture, urban planning, literature studies, and ecology, and analyzing case studies from Europe, the Americas, and Asia, this volume offers a broad and innovative exploration of processes of cities losing and regaining their rivers.

## HIGHWAYS AND HINTERLANDS: DIRECTIONS AND PERSPECTIVES IN RIVER-CITY RESEARCH

Environmental historians ignored urban topics for a long time. Cities were often regarded as the exact opposite of what this field of historical inquiry seemed to be about; namely, a place where nature was to be found only in derivative and ephemeral forms—a “second” nature at best. This changed, however, in the 1990s, when more and more scholars acknowledged that cities can be analyzed from an environmental perspective too. Today, topics such as urban metabolism, animals in the city, and the creation of urban parks are an integral part of environmental history.<sup>4</sup>

The study of the urban environment also benefited from recent attempts to reconceptualize the material foundations of society. While these approaches represent “an eclectic range of non-, post-, and (less commonly) neo-Marxist materialisms,” as Chris Otter has pointed out, their common goal is to counter the relative negligence of material/environmental factors that the dominance of cultural studies and cultural theory in the humanities has brought about.<sup>5</sup> As far as the “rematerialization” of urban studies is concerned, rivers play an important role.<sup>6</sup> They supply energy and water and function as a means of transportation and as sinks for urban effluents. As a result of their inherent dynamics, they have enabled, shaped, and transformed urban development.<sup>7</sup>

This does not mean that questions of perception and representation have lost their importance. Rivers are not only energy suppliers and sinks, they are symbols as well, and they can be read. The “river’s edge” in particular, as Tricia Cusack has pointed out, “has long been a prime site for religious, monarchical and government buildings as well as a favorite place of residence for elite society.”<sup>8</sup> Capital cities such as London or Prague used the urban riverfront to demonstrate the power of nation-states, while promenades along urban rivers such as the Danube River islands of late eighteenth-century Regensburg offered a space to middle- and upper-class urbanites for leisure and representation.<sup>9</sup> In Paris, the Seine has been systematically used since the sixteenth century to foreground architectural grandeur on the river shore—the famous Pont Neuf is a first case in point. Starting with the Collège des Quatre-Nations (1661–1667), a tradition was established of erecting representative buildings that used the river as a “distancing device” to better set in scene the beauty of this architecture.<sup>10</sup> In fictional literature, as Agnes Kneitz aptly demonstrates in her analysis of Charles Dickens’s *Thames*, rivers often act as anthropomorphized players. Urban riverscapes can be and are being modeled in ways similar to how an artist produces a sculpture. A comprehensive perspective on the subject therefore has to integrate a great variety of foci, a task that is taken up within this volume.

One of the earliest conceptualizations of river-city relations can be found in Johann Heinrich von Thünen’s theory of the “isolated state.” First published in 1826, it provides a concentric model of land-use patterns around urban centers.<sup>11</sup> Framed by the pre-fossil-fuel regime of production and transportation, Thünen’s theory acknowledges the role of rivers but underestimates their fundamental influence on the spatial distribution of different types of agricultural and forestal production near urban centers. By facilitating and economizing the transport of bulky goods and accelerating the delivery of easily perishable products, the presence of a river alters and considerably enlarges urban hinterlands in terms of provision.<sup>12</sup> This circumstance is important for the approach that this volume takes toward conceptualizing river-city relations, because it addresses the ways in which many cities are structurally bound to rivers, and it illustrates the functional role of rivers connecting cities with their respective hinterlands—a relationship that is of utmost importance not just for the city but for the hinterland itself. Defining and describing the spatial extent of the legal and economic quality of urban hinterlands as well as the city’s socioecological impact, however, are traditional research topics

in geography, economic history, and social ecology—starting with the city-hinterland models sketched by Thünen or Walter Christaller, to the “feeding the city” project on medieval London, all the way to more recent calculations of urban metabolisms and footprints.<sup>13</sup>

Rivers open hinterlands. In the case of port cities, rivers have connected cities to hinterlands of global scale for centuries.<sup>14</sup> Late-medieval Flanders, for example, as a boom region where population growth threatened to overstretch the carrying capacity of its immediate hinterlands in terms of food and wood production, relied on water- (and river-)based transport of grain and wood from hinterlands far away in the Baltic to sustain its growth.<sup>15</sup> In this volume we acknowledge that river cities are connected to their respective hinterlands in various ways and we do not look at the history of individual cities as isolated from their natural, social, and political surroundings. In fact, it is one of the main assets of this volume that it highlights these entanglements—most prominently in the first section, which assembles chapters that explicitly focus on these interrelationships.

Organicist approaches, too, have played an important role in explaining river-city relations. One especially influential example is the concept of urban metabolism, which is based on the Marxist metaphor of social metabolism. From this perspective, cities are conceptualized in analogy to biological organisms as maintaining a metabolism with their environments, thereby exchanging material resources, energy, products, and information, and building material stocks, as well as discharging waste. Measuring or calculating material and energy flows across city limits provides a telling perspective on the material dimension of urban development, on city-hinterland relations, and on the sustainability of the urban economy. The concept of “urban metabolism” was first applied in a study on Hong Kong, at that time still a British colony and as such clearly demarcated from the Chinese mainland by political borders—providing the advantage of clearly defined city limits and statistical demarcation of in- and outflows. Recent studies on Vienna show the potential of this approach particularly for tracing the major transformation of European energy regimes over the course of the nineteenth century.<sup>16</sup>

Tracing the material exchange of cities through the use of a quantifying approach will quickly direct attention to the important role of rivers as mediators between cities and their hinterlands. A focus on the metabolism of cities also triggers inquiries into the political control that cities exert in regions far beyond their city limits. The chapters in the first section of this book deal with issues such as how cities can succeed in enforcing their interests via rivers to

secure their resource supply beyond their legal boundaries, and where and how extraterritorial interests and control over water bodies have competed with the needs of other—smaller—cities.

An additional challenge for the historical analysis of city-river relations is to come to terms with the entanglements between the peculiar rhythm of a river (as expressed by the irregular sequence of droughts and flooding, for example), the unique spaces and places that rivers create (by morphological changes, sedimentation, and erosion), and the multitudinous human interventions into these natural dynamics. From a *longue durée* perspective, the interplay of these factors triggers questions of periodization and the search for caesuras. Which factors usher in new periods? What is the role of technology, infrastructure, and changing methods of industrial production, like the development of railway systems or the increasing importance of hydropower (“white coal”)?<sup>17</sup>

One eye-opening way to address these issues is to look at “life cycles” of rivers—a concept that bridges long-term and short-term perspectives. Can we identify long-term cycles in the utilization and transformation of rivers, such as different socioecological regimes and their respective impacts, or the use and depletion of resources?<sup>18</sup> Furthermore, it is crucial to acknowledge the importance of shorter cycles of seasonality—or, more precisely, different seasonalities: the physical consistency of a water body can make a huge difference in the ways in which a society appropriates a river: frozen and fluid rivers, high and low water levels, or different chemical properties like varying grades of oxygen saturation. These biophysical states correspond with different uses over the course of the year, as several of the chapters impressively demonstrate, most explicitly the analysis of the frozen Neva River in Saint Petersburg by Alexei Kraikovski and Julia Lajus.

Some authors, most prominently Mark Cioc, have argued that rivers have their own “ecobiographies.” Cioc has applied this approach very successfully to the Rhine and has shown how such a concept can be used to highlight the multifaceted interrelations between fluvial dynamics in their long-term development and human agency while avoiding dichotomic notions of “natural” forces on the one side and societal impacts on the other.<sup>19</sup>

Another promising approach to tackling the coevolution of cities and rivers analytically has recently been suggested by an interdisciplinary research team investigating the environmental history of the Viennese Danube from the sixteenth to the end of the nineteenth century.<sup>20</sup> This approach focuses especially on the importance of interfaces and connections between the natural

and the social world. Founded on the social ontology developed by Theodore Schatzki and the social ecology of the “Vienna School,” these connections are described by the authors as “socio-natural sites,” i.e., as constantly developing constellations of human practices and material/biophysical arrangements.<sup>21</sup> These nexuses are embodied in infrastructural systems such as bridges, weirs, dams, etc. The major advantage of this approach is the opportunity to study the historical transformation of a riverine landscape in a way that avoids merely anthropocentric or naturalistic notions while acknowledging the dialectic nature of all transformation processes.<sup>22</sup>

## PART I: RIVERS CONTROLLED: CITIES AND THEIR WATERSHEDS

The first part of this book deals with the questions of how and with what effects cities have controlled their rivers and—through these—their hinterlands. Given the crucial role of rivers for the provision of elementary resources stated above, this is discussed for the two European metropolises Paris and London within longer time frames. The chapters by Sabine Barles and Vanessa Taylor reflect how these European capitals managed to safeguard the control over resources and their long-term provision deemed necessary for their survival and functioning. Whereas the policy outcomes are structurally similar—the interests of the metropolis are prioritized through the sanctioning of central state authorities—the perspectives of the two authors differ in that Barles’s paper looks at the material and infrastructural outcome of these policies while Taylor is more concerned with issues of democracy and political representation. A completely different setting, the catchment area of two tributaries of the Saint Lawrence in a nonmetropolitan region of Quebec, Canada, is highlighted by Stéphane Castonguay. He shows highly divergent development paths in the way that the major city of the catchment could effectively control and direct this development.

In “Rivers, Industrial Cities, and Hinterland Production in Québec in the Nineteenth and Twentieth Centuries,” Castonguay tells a story of how and why two watersheds of tributaries of the Saint Lawrence, the Saint Maurice River north of the stream and the Saint François River south of it, evolved quite differently. Whereas the Saint François watershed showed a significant density of agricultural settlement and a diversified network of towns and villages already in the nineteenth century, the watershed of Saint Maurice remained dominated by logging and, from the 1890s, large-scale hydropower and energy-intensive industries. Castonguay demonstrates that the regional hegemony

of one major industry such as logging effectively prevented any effective environmental upgrading at the Saint Maurice before this industry wound up in 1995. The Saint François hinterland, in contrast, with its more diversified settlement and industrial structure and concomitantly a broad plurality of stakeholders with their competing interests, saw environmental improvement on its way beginning in the 1960s. In both cases the major city could not exert such an overpowering influence as Paris or London on their watersheds; other players such as the regional government or large power companies were important stakeholders too. The long-term impact of specific development paths is particularly striking in this case study. The Québécois case studies highlight impressively the “production of hinterlands” through the mediation of rivers. The river is, as Castonguay puts it succinctly, a “fundamental form of communication and integration,” and it is through its effects that hinterlands are being shaped and defined.

Barles demonstrates in her study covering more than three centuries how Paris managed to appropriate essential resources for its metabolism and functioning by making use of the Seine. In the second half of the seventeenth century, wood was the essential resource for the city and Paris was given authority by the French state to establish a regime of monopolistic control over the woods and the trade in fuelwood in the catchment area of the Seine and its tributaries. Legal control and physical adaptation of Paris hinterlands to ensure sufficient wood provision went hand in hand. In the nineteenth century water gained prime importance in order to supply the rapidly growing Parisian population with adequate drinking water. Because the water of the Seine transversing Paris was not considered clean and plentiful enough, Paris turned to springwater from the upper catchment area of the Seine and its tributaries. Despite massive conflicts over this extraction and diversion of springwaters, the capital on the whole was able to buy the necessary resources and land as a quasi-private actor and then to secure the support from the state to divert the waters for the needs of Paris. In the twentieth century the focus on water shifted to a comprehensive attempt to regulate and stabilize the flow of the Seine in order to prevent disastrous floods, as in 1910, as well as severe droughts, during which the state of the river at Paris was frequently reduced to a sewer.<sup>23</sup> Paris and its surrounding *départements* embarked on a long-term strategy to erect large reservoirs at the headwaters of the Seine catchment area that would balance the water flow over the year and nearly abolish seasonality. By the late twentieth century the entire Seine watershed was turned into a comprehensively regulated and technicized hydraulic system. Valuable be-

yond the Paris case is Barles's coining of concepts: she talks about "institutional imprints" that were exercised by the city of Paris, usually supported and sanctioned by the state on a quite extensive hinterland. Through these projects urban exterritorialities or "out-infrastructures" developed: installations and technological systems that were located far away from the capital but whose only *raison d'être* was the provision of urban needs. Thus, as Barles postulates, "the river and its tributaries are (almost everywhere) 'urban' in a functional sense."

Taylor reflects on the ways in which water issues were governed and regulated in the Thames River basin from the mid-nineteenth century until the creation of Regional Water Authorities in the 1970s and 1980s. The title of her contribution, "Watershed Democracy or Ecological Hinterland?," signifies Taylor's concern with the history of political debates on the river and highlights a tension that is constitutive for her narrative: she recounts how the hodgepodge of various local government bodies in charge of water issues was replaced in the early 1970s, still under the auspices of more efficient environmental planning, by large Regional Water Authorities. These integrated functions of environmental monitoring and the provision of public water and sewerage on the basis of a supposedly natural scale, the river basin. The downside of this was the loss of local, democratically elected control, which was exacerbated by the subsequent privatization of these Regional Water Authorities by the Thatcher government. But Taylor's account is not just a story of depoliticization, of loss of local democracy; it is more complicated. Through highly differentiated processes of rescaling, new arenas of political action have arisen in which civil society groups have partly replaced the former role of local government. On the other hand, the European Union and its environmental legislation such as the Water Framework Directive of 2000 have provided space for policy interventions and knowledge sharing to a wider range of civil society groups than was available under the old regime of local democracy. Thus, Taylor detects "new modes of participation and accountability for rivers that exceed what was on offer from representative local bodies up to the 1970s."

## PART II: URBAN RIVERS TRANSFORMED AND LOST

From the mid-eighteenth to the mid-twentieth century (and often continuing to the present), many rivers witnessed unprecedented transformations that profoundly altered the relationship between cities and rivers. The reasons for these changes are manifold but two developments clearly stand out:



industrialization and urbanization. Both radically changed the functions of rivers. As Stéphane Castonguay and Matthew Evenden have pointed out in the introduction to their collected volume *Urban Rivers*, urban and industrial growth were closely intertwined and their joint development “produced not only many more and larger cities in the nineteenth century but also reorganized their internal structure, produced increased problems of energy, materials, and food supply, and delivered new waste streams in the air, soil, and water.”<sup>24</sup>

Rivers played a crucial role in this development. They served as commercial arteries, guaranteeing the steady, uninterrupted, and year-round flow of increased navigation; they had to supply drinking water for the rapidly growing urban population; they were increasingly called upon as an important source of energy; and many of them became “ultimate sinks” for the disposal of human and industrial waste.<sup>25</sup> However, in order to properly fulfill these new tasks, rivers needed to be engineered to become more reliable and much less subject to the vagaries of climate, the weather, and river morphology, to become streams uninhibited by rapids and shallow water, by floods and droughts, by narrow bends and meanders.

As a result, many rivers experienced morphological changes to such a degree that they came to resemble canals more than natural streams. They were straightened, shortened, bordered with levees, and harnessed into narrow channels. Hydraulic engineers sometimes openly enjoyed “pushing rivers around.”<sup>26</sup> In the twentieth century, “recasting the world’s rivers ranks among the signal environmental changes,” as John McNeill has pointed out.<sup>27</sup> Consequently, river islands and sandbars disappeared, oxbows were cut through, branches cut off, riverbeds eroded, wetlands adjacent to the main channel drained, biodiversity decreased, and the size of the floodplains shrunk tremendously. The Rhine, for example, was shortened by 105 kilometers—8 percent of its entire length—as a result of several correction works. Until 1975, 90 percent of its floodplain had been claimed by residential areas, roads, farmland, and other anthropogenic purposes.<sup>28</sup>

Rapid population growth in nineteenth-century cities throughout the world but especially in Europe and North America quickly overburdened the traditional systems of water supply and waste disposal. Cisterns and wells no longer sufficed to meet the growing demand for water, so cities began to build waterworks—such as the Longdendale Reservoir near Manchester in 1851—and tap ever more distant sources to fulfill their needs.<sup>29</sup> In the United States, New York City and Boston had already begun constructing elaborate aque-

ducts in the 1840s. In 1913, William Mulholland famously announced the opening of a 235-mile aqueduct from Owens Valley to Los Angeles with the words “There it is! Take it!” A couple of years later, in what has become one of the best-known episodes in American environmental history, the Hetch Hetchy Valley in Yosemite National Park was flooded in order to create a reservoir for the city of San Francisco.<sup>30</sup>

However, the growing supply and increased water consumption—triggered not just by population growth but also by technological innovations such as the water closet—created new problems. Most importantly, cesspools and privy vaults were overburdened by the increasing amount of sewage and “cities across [the United States] began to drown in their own filth,” as Ted Steinberg has pointed out.<sup>31</sup> Consequently, a lot of human and industrial waste found its way into the rivers, creating pollution to an extent unknown and countless sanitary problems. The famous “Great Stink” of London in summer 1858 was to a large degree due to the fact that human excrement from the newly introduced water closets had been washed via sewers into the Thames, where it came to lie exposed to air in the dry June of 1858.<sup>32</sup> As a result, cholera epidemics killed thousands of urban dwellers from the mid-nineteenth to the early twentieth century.<sup>33</sup>

The effects of population growth on urban rivers were not limited to sanitary problems, though. In many towns, marginalized groups often had little choice but to settle in the marginal and vulnerable parts of town, and the riverbanks were certainly among them. Squatters and homeless people in Toronto’s Don River valley, African Americans in many US river cities, displaced persons in postwar Munich and Hamburg, and poor citizens in Bogotá, all found temporary homes in neighborhoods that had been given up by the urban elite, in shantytowns, on houseboats, and other more or less informal settlements right next to or on the river.

The urban floodplain was also increasingly utilized for infrastructural and industrial purposes. This amassment of damage potential in an area that is hydrologically a part of the river led to ever more sophisticated and costly flood control projects. This development was especially noticeable in those cities where rivers were “trapped” between embankments or hidden behind massive flood walls. Often, urban flood control works were accompanied by the displacement of the working poor, homeless people, and other marginalized groups living in these liminal spaces. In the name of modernization (for example, in the form of “slum clearance”), such sites were condemned or simply given up and people had no choice but to move, either by force or

as the result of neglect.<sup>34</sup> Consequently, riverfronts and public landings—for a long time the central place of river cities—declined in importance and the local populations turned their back to the river.<sup>35</sup> In a similar vein, cities used their river valleys as a repository not just for urban waste and sewage but also “for prisoners, for the institutionalized poor, and for people who in other ways failed to measure up to nineteenth-century liberal values of rationality, moral rigour, and self-advancement,” as Jennifer Bonnell has argued.<sup>36</sup> This certainly holds true for many river cities in the age of industrialization and urbanization, as the chapters in this section clearly show.

One of the most striking examples of how a city has “lost” its river can be found in the city of Nantes in western France. Fifty kilometers from the Atlantic Ocean, the city struggled to maintain a shipping channel to the estuary as oceangoing vessels became bigger and bigger over the course of the nineteenth century. Geneviève Massard-Guilbaud describes in intriguing detail the drastic modifications of the Loire in the twentieth century. Engineers filled the river arms and diverted an urban tributary into a tunnel. As a result, the entire structure of the city changed and the river disappeared. Excessively wide streets took the place of the filled river, while authorities and inhabitants remained surprisingly passive in the face of this dramatic transformation of the urban landscape.

In Cleveland, engineers and industrial and transportation interests aimed at modifying the urban landscape too. Their target was the Cuyahoga River, which drains into Lake Erie in northeast Ohio. David Stradling shows how the Cuyahoga has helped to create one of North America’s great industrial valleys. Cleveland’s steel mills, oil refineries, and chemical and shipbuilding plants all relied on the river and clustered in the narrow flats. Industrialists and city leaders went to great lengths to straighten the “crooked” river, but failed to do so as a result of the complexity of diverging interests circling around the Cuyahoga River. According to Stradling, the story of the Cuyahoga “serves as an object lesson in the city’s conflicting interests and complicated politics.”

Vladimir Sánchez-Calderón explores the relationship between the Tunjuelo River and the growth of the Colombian capital Bogotá. Sánchez-Calderón identifies three important functions that the river has fulfilled at different times in the development of the city. Firstly, it served as the main water source of the city from the late 1930s to the end of the 1940s. Secondly, the floodplain of the river provided much-needed land for the fast-growing city and especially for its low-income neighborhoods since the mid-1940s. Finally, the river served as a supplier of aggregates, a key component in the production of

reinforced concrete, which could be dredged from the river bottom starting in the 1950s. Together, these developments profoundly altered the river's local hydrology and produced several severe incidents of flooding, mostly of the highly vulnerable informal neighborhoods right next to the riverbank.

Christoph Bernhardt traces a century-long transformation period in the relationship of the city of Strasbourg to the Rhine River. The city had benefited from its location between the Rhine and the Ill, a left-bank tributary, since Roman times; however, it also suffered badly from recurring floods. In the early nineteenth century, new flood protection works minimized this danger but also resulted in a decline of the water table and a relocation of the riverbed to the eastern parts of town, away from the city center. The effects of these interventions on river navigation, together with the rising importance of the railroads, were disastrous. Upstream navigation was temporarily abandoned in 1864 and Strasbourg all but lost its role as an important harbor city. The regional metropolis—a German city during the time between the Franco-German War of 1870–1871 and the end of World War I—responded to these challenges by investing massively in the sanitary infrastructure of the city, huge new harbor facilities, and the construction of a Rhine side channel all the way to Mannheim. While these measures heralded a renaissance of city-river relations, they were also highly contested in a city that was culturally divided between French and German influences, as Bernhardt points out.

Dirk Schubert's chapter looks at how the city of Hamburg has historically modified the Elbe River—the link that connects the city both to its upstream hinterland and, via the North Sea, to the entire world. With the rise of railroad and steamship in the nineteenth century, Hamburg saw its future as a tidal seaport, easily accessible by even the biggest ships. Thus, the city invested heavily in several port expansions (including a “free port” area in which housing was prohibited) and the building of modern quays, new bridges, and more. This by and large successful development, however, came to a temporary halt as a result of World War II, particularly due to the severance of much of the city's riverine hinterland, which now lay behind the iron curtain, and the devastating 1962 flood, which killed more than three hundred citizens and called into question the adequacy of contemporary flood protection works. Since then, city-river relations have been characterized by the interplay of an “aggressive industrialization” of the lower Elbe region and ever deeper dredging of the riverbed on the one hand, and increasing environmental concerns and measures to improve the leisure quality along the riverbanks on the other.

### PART III: CULTURAL DIMENSIONS OF URBAN RIVERS

When Felix Fabri, a late fifteenth-century clergyman and travel writer, described the relationship between the small river Blau and the southern German town of Ulm, he used highly anthropomorphic language.<sup>37</sup> Most of the time, he argued, the river and the city coexisted in an intimate and peaceful way, with the river Blau acting as the city's burgher (*civis*) and friend (*amicus*), permanently feeding the city's wells with freshwater, driving the mills, and washing away the effluents. Sometimes, however, Blau turned from a burgher and housemate (*domesticus*) into the most terrible enemy approaching the city with furious violence, breaking and devastating everything it met. Fabri's colorful language in this narrative is by no means a singular example. At any time in history, humans have attributed symbolic meaning to their material surroundings and have thought and spoken about their relations to "nature" in a metaphorical way. Doing so is an important prerequisite of human culture making man an *animal symbolicum*—to use philosopher Ernst Cassirer's term.<sup>38</sup>

Most obviously, rivers are part of this story. They are material structures that can be read by people who live on their shores and make use of them, but rivers can also be imagined, conceptualized, remembered—or forgotten. Rivers are subjects of fictional literature and fine arts. They provided material for romanticized notions of national identities (like "Father Rhine" or the *Donaumonarchie*, a term equating the former Habsburg empire with the Danube, its most prominent river) and urban imaging alike. Social practices related to a river can find a long-lasting place in collective memory and be present in rituals long after the respective social reality and professional contexts have vanished. In Newcastle upon Tyne, for example, the local magistrate surveyed the tidal portions of the Tyne River once a year on Barge Day (celebrated on Ascension) to claim its "conservatorship" over the river.<sup>39</sup> Furthermore, rivers play a prominent role in religious beliefs.<sup>40</sup>

The third part of this volume discusses the cultural dimension of city-river relations. The individual chapters tell us how urban citizens thought about their rivers, what metaphors they used, and what these metaphors show us about the social reality, moral norms, and political ideologies in river societies. They illuminate the roles rivers play within urban and civic rituals and ceremonies. They shed light on how river locations were perceived and how these perceptions changed over time, how urban rivers have figured as core sites of national, political, social, and religious identities. The chapters in this section discuss how these notions were negotiated, who claimed the river and

for what purposes. Can rivers be conceptualized as urban sites of memory? And—with regard to Massard-Guilbaud’s chapter—what are the cultural implications when, as a consequence of material change, a city “forgets” about its river? The interplay of proximity and distance between urban society and the river, sensual perceptions such as seeing, smelling the water, crossing the frozen river on foot in winter—how do all these perceptions and practices shape urban knowledge and urban identities? The four contributions to this section provide case studies dealing with sites as different as the amphibian world within Chinese shipmen’s songs; the dark hell of London’s Thames mirrored as sanitary abyss in Charles Dickens’s novel; the site of the “holy” Ganges, where contradicting colonial and indigenous notions of purity and sanity were being negotiated; and finally, the seasonal calendar of the river Neva in the everyday life of Saint Petersburg’s urban dwellers.

Understanding rivers as prisms of imaginary urban topographies, Igor Chabrowski offers insights into the representation of Chongqing, Eastern Sichuan, in the songs of boatmen sung as they passed or entered the city on the rivers Jialing and Yangzi. For the boatmen, the relationship to water grew out of their daily experience of both the river and the expanding city through which they navigated. Underlining the role of the historically changing socio-economic context, Chabrowski states that the workers’ songs could tell historians more about work on the river than about the stream itself, as they mainly reflected the selective perceptions, hopes, and worries of the boatmen. Thus, lyrics and melody can become valid sources for research in urban identity studies and environmental history.

Awadhendra Sharan inquires how colonial authorities addressed the question of rivers as sinks for urban waste, by focusing on the river Ganges and its relationship to the towns of northern India from the 1890s to the 1930s. For him, an answer to this question has to be based on an appreciation of India as a colonized space. Europeans and native communities developed their respective decision making about the permissibility of discharging sewage into the “holy river” on contradictory concepts of purity, sanity, and the sacred or secular character of water bodies. For this reason Sharan advocates a holistic approach, combining different strands of investigation: tracing native conceptions of sacred rivers (as exemplified in annual bathing rituals), and analyzing the nineteenth-century “modern” problems of pollution in tropical rivers as well as (Western) scientific debates on these problems, finally leading to a reflection on the “ambiguous nature of colonial modernity, and the limits placed on the fuller realization of the modern sanitary project.”

Agnes Kneitz presents a reading of the novel *Our Mutual Friend*, by Charles Dickens, from an environmental perspective. Kneitz shows how Dickens interwove his own perception of the contemporary crisis in urban sanitation with his fictional and highly metaphorical story line. From this perspective, the text reveals the author's environmental consciousness as he described the Thames and London as what we would today call a shared ecosystem. According to Kneitz, by focusing on the risks of river pollution and their impact on human lives and by paralleling practices of river use with moral values, Dickens conceived of the river as an actor in bringing death and disease to the city, concluding with the implicit argument that only by restoring its ecological balance (to use an anachronistic term) could London reemerge as a living space.

Narrating urban life in interaction with Saint Petersburg's Neva River, Alexei Kraikovski and Julia Lajus correlate the river's seasonally determined life cycle with its cultural appropriation by urban society. They demonstrate that this life cycle is mirrored in practices of river use, recreation, and ceremonies. Due to the great seasonal differences in temperature the city's topography itself is almost literally in flow. With certain modes of transport possible only at specific times of the year (shipping, walking, and road transport on the frozen surface) and different degrees of the river's accessibility, the Neva's imprint on the urban culture of Saint Petersburg can hardly be overestimated.

#### PART IV: RIVERS REGAINED

Over the last couple of decades, a steadily growing number of cities have tried to reappropriate their rivers. These efforts have taken many different forms and they represent anything but a linear success story. Nowhere have urban rivers been restored to their preindustrial status—an impossible task anyway in most cities. Often the restoration attempts have followed ideas that reflect the needs and values of current societies more than historical templates. But what all these endeavors have in common is a remarkable shift in the hegemonic understanding of the role the river is supposed to play for urbanites as contrasted to before the 1970s.

Several developments have come together in fostering the “rejuvenation” of urban streams. First of all, the transformation of rivers into “thoroughly anthropomorphized stream[s]” triggered critique from its very beginnings.<sup>41</sup> While the environmental degradation of rivers was by and large accepted as the price that societies, and especially urban societies, had to pay for the benefits of modernization, it was nevertheless perceived as a loss.<sup>42</sup> This feeling of loss intensified as more and more rivers were literally sacrificed and turned

into “problem rivers”—highways not only for river traffic but also for the dissemination of pollution and disease.<sup>43</sup> Following modernist reasoning in all its consequences, it was only logical to actually hide these rivers from sight, to fill them completely, to make them flow underneath the surface, beneath concrete ceilings, or to change their character in such a way that they vanished from the public consciousness.<sup>44</sup>

Secondly, river restoration, especially in cities, benefited from the changing economic function of rivers. The loosening grip of railroads, warehouses, and industrial facilities on the urban waterfront opened up new possibilities for other, less ecologically demanding utilizations of the urban floodplain. Many municipalities chose to fill this void by creating urban parks. In Japan, as a result of stalled economic growth after the energy crises of the 1970s, multiple *shin-sui* (“playing with water”) parks were opened on the urban riverbanks. “Although these projects were conducted for recreational rather than for ecological purposes, they helped to turn people’s eyes back to nature.”<sup>45</sup> The same is true for parks that have been the by-product of flood control measures and attempts to improve water quality. One of the most famous examples is Boston’s “Emerald Necklace,” designed by Frederick Law Olmsted in the late nineteenth century and regarded by many as a “landmark in American park planning.”<sup>46</sup> In general, as Anne Whiston Spirn noted in 1984, the “recent profusion of urban parks that serve multiple purposes of flood control, water quality improvement, and recreation do not reflect a new idea, but rather the rediscovery of old solutions,” i.e., of solutions stemming from the late nineteenth and early twentieth centuries.<sup>47</sup>

Furthermore, the rise of the environmental movement in the 1960s and 1970s and the increasing percolation of ecological thought into scientific as well as popular discourses also changed the way in which urban rivers were conceptualized. Rivers came to be seen by the urban public no longer exclusively as economic arteries and open sewers but increasingly as fascinating ecological entities in their own right, providing a rich habitat for a diverse variety of fauna and flora and a popular destination for leisure activities right at the doorstep of many urban dwellers. Paradoxically, environmental catastrophes on urban rivers actually played a significant accelerating role in this development. The Cuyahoga River, for example, which functioned as an open sewer for the many industrial companies in Cleveland, Ohio, caught fire several times in the 1950s and 1960s and thus emerged as a potent symbol of urban blight and decay. The last of these conflagrations in June 1969, however, had a profound impact on the nascent environmental movement in the United



States and, at least indirectly, contributed to the passage of the Clean Water Act of 1972.<sup>48</sup> In a similar way, the 1986 environmental disaster at the Sandoz chemical plant in Basel, Switzerland, when tons of highly toxic pesticides, insecticides, and other agrochemicals were washed into the Rhine after a fire and created widespread ecological havoc downstream, catalyzed attempts to clean up the river and triggered the Rhine Action Plan for Ecological Rehabilitation of 1987.<sup>49</sup>

Since the 1990s, these different attempts to clean up and to reappropriate rivers have dovetailed into a significant movement in many parts of the world. In the United States alone, more than thirty thousand projects to restore rivers and wetlands have been initiated since 1990.<sup>50</sup> However, the term “river restoration” comprises a wide variety of activities, ranging “from replanting riparian trees or fencing livestock out of stream corridors to the removal of dams and full-scale redesign of river channels.”<sup>51</sup> Urban river restoration is even more complex and complicated due to the manifold superimposed interests and responsibilities involved in the process and the general ambiguities of “urban nature.” Here, rivers often had to be rediscovered and physically uncovered, highlighted or daylighted before they could be “restored.”<sup>52</sup> Still, there can be no doubt that a large number of urban rivers (or urban stretches of rivers) have yet again witnessed fundamental changes since the 1990s (and often long before) and that many of these changes have resulted in a heightened awareness of the presence of nature in the city. River restoration in the city is much more visible, dramatic, and accessible than it is in a rural context. It “captures people’s imaginations” and the attempts to reappropriate a river have quite often served as an ideal stage for the demonstration of local environmental efforts and civil society at large, as all four chapters in this section emphasize.<sup>53</sup>

The benefits of urban river restoration are not limited to ecological, aesthetic, and recreational improvements, but can also include the reinvigoration of economic activities on the waterfront and an intentional or unintentional revaluation of city centers. Furthermore, restored or “repaired” urban rivers also function as outdoor classrooms to educate the public about the value of nature in the city.<sup>54</sup>

The fate of the Cheonggyecheon River in Seoul is a good example to highlight many of the opportunities and problems of urban river restoration. Due to a multitude of sanitary and social problems in the shantytown areas right next to the river, the Cheonggyecheon has undergone a decades-long modernization process that started in the 1950s when the river was buried under

a thick layer of concrete. In the late 1960s, an elevated freeway was built on top of the foundation. From 2002 to 2005, however, the city initiated a massive program to dismantle the decaying infrastructure, uncover the river, and create a pedestrian corridor along its banks. Today, the Cheonggyecheon is anything but a natural river. In fact, this “restored river” is still a highly engineered environment, the creation and maintenance of which requires massive and recurring amounts of capital, labor, and political efforts. For example, as the authorities could not bring themselves to restore the river’s former flow direction, no fewer than 120,000 tons of water have to be pumped from the Han River every day. Still, the remodeling of the Cheonggyecheon highlights the increasing importance of “repaired” natural places in the city and their functions for urban dwellers.<sup>55</sup>

The fourth and final section of this book reflects the origins, the diversity, and the results of these attempts to regain urban rivers. Harold Platt traces the changes the Chicago River underwent during the transformation from the “age of environmental engineering” to the “age of ecology”—a forty-year-long conflict over the meaning of the river. Platt shows how Chicago remained the last major holdout in the United States against coming into compliance with the Clean Water Act of 1972. Every day, the city dumped 1.2 billion gallons of partially treated sewage into the Chicago River, arguing that its inhabitants had Lake Michigan for recreational purposes. Things changed for the better only when the Environmental Protection Agency in 2011 ordered Chicago to disinfect its sewage and to complete its “Deep Tunnel” plan of flood control. But while environmentalists and city administrators battled over the river aboveground, the river itself produced a second story underneath the surface—a natural history of aquatic life responding to human-altering conditions, as Platt points out.

Michael Toyka-Seid, too, identifies a turning point in the changing relationship between cities and rivers in the late twentieth century. He also questions the linearity of the transformation of rivers into the preferred playground for urban developers, a living space for the better-offs of urban society and a place for leisure and relaxation for everybody else. His research design is especially suited to this task since he looks at two neighboring cities on opposite sides of the Rhine—Mainz and Wiesbaden, state capitals of Rhineland-Palatinate and Hesse, respectively. Highlighting the similarities and differences of the two cities’ dealings with the Rhine from about 1970 to the end of the century, Toyka-Seid notes that the reappropriation of the river, though a constant plea throughout the decades, consisted in fact of rather small and

isolated developments such as the creation of upscale residential areas, museums on the riverbanks, and a few recreation areas.

Another German river—Munich’s Isar—is often referred to as an international model of successful urban restoration attempts. Nico Döring and Georg Jochum trace the important role the river has played in the history of the city and explain the obstacles that local activists had to overcome in their attempts to revitalize the river. The authors describe the origins of the “IsarPlan,” an ambitious project to renaturalize an eight-kilometer-long urban stretch of the river that had been initiated by local environmental groups in the 1980s and later been adopted by the state of Bavaria and the city of Munich. After eleven years of heavy construction work, the last part of the project was finished in 2011.

The international tour of urban rivers ends in Fez, Morocco. Shelley Hornstein there showcases the work of architect Aziza Chaouni and her Bureau of Ecological Architecture and Systems of Tomorrow (Bureau EAST) to resuscitate the Fez River, an urban stream that had been buried under a concrete parking lot. Hornstein contrasts Chaouni’s work with the many examples of urban star architecture. She interprets the recent restoration projects in Fez and other parts of the world as “monumental” in their own right and hence “worthy of celebrity status.” The fundamental difference, though, is that Chaouni’s project “involutes—that is, it hides behind and inside, swells, or reflects rather than builds on, up, and out.” In Fez, this means that the buried river, a heavily polluted “river of trash,” is now being praised and remembered.

The contributions to this volume open up a broad and multifaceted view on the complex history of how cities in different parts of the world have lost and regained their rivers. It is—as so many stories are—an open-ended one. Tim LeCain’s example of the restoration efforts on rivers in Montana, formerly straitjacketed for and poisoned by copper mining, reminds us of this open end. When in 2008 the Milltown Dam not far from the city of Missoula was opened, allowing the Blackfoot Rivers to return to their natural flow regime, politicians considered this to be an important step representing “Montana’s shift from an extraction to a restoration economy, creating jobs that protect the environment and use the state’s natural resources in a sustainable way rather than plundering them.”<sup>56</sup> What they did not mention is that the world’s need for these resources and their industrial processing has not vanished but the production has been moved to other world regions, poisoning rivers and shaping the river stretches of highly industrialized cities there. How will cities of the global south further develop the relations to their rivers? As historians

we are much more at ease with analyzing the past than with predicting the future. The contributions of this volume show that fundamental changes in city-river relations can take place given fortunate constellations of economic conjuncture and political will. Investigating and telling the stories of cities losing and regaining their rivers are demanding tasks. Scholars in this field have to be aware that the coevolution of cities and rivers is an inextricably interwoven process, a complex assembly of human and nonhuman actors, and an arena where material and symbolic worlds merge. With the geographical scope and the broad variety of case studies from different disciplinary backgrounds, this volume tries to tackle this complex and fascinating story.