

1



Rivers in History and Historiography *An Introduction*

CHRISTOF MAUCH AND THOMAS ZELLER

Sources of both abundance and destruction, life and death, rivers have always had a powerful hold over humankind. They run through every human landscape, whether mythical or actual. In the Book of Genesis, the geography of humanity's first home is defined by a river that flows through Eden and separates into four headwaters, creating the Pishon, Gihon, Tigris, and Euphrates rivers. According to classical mythology, the boundaries of the underworld are likewise demarcated by rivers: the Acheron, Cocytus, Phlegethon, Lethe, Eridanos, and of course the Styx. Even the Epic of Gilgamesh (c. 2100 BCE) tells of a catastrophic river flood sent by angry deities to destroy all life.

As every anthropologist knows, the rise of civilizations has always been inextricably linked to the successful management of water when there was either too little or too much of it. Lewis Mumford has observed that "all the great historic cultures . . . have thriven through the movement of men and institutions and inventions and goods along the natural highway of a great river," and over the centuries rivers have often become identified with the societies they supported.¹ Can one think of China without imagining the Yangzi, of ancient Egypt without recalling the Nile, of Caesar's Rome or Dante's Florence without picturing the Tiber or the Arno? Many writers of the past have claimed affinities between rivers and the communities connected to them. The Rhine and its people were said to be romantic; the Thames, imperial; the Rhône, savage; and so on.² This anthropomorphizing tendency often appears in patriotic and even jingoistic contexts; the qualities of partic-

ular rivers are alleged to reflect those of particular nations. The control of water and the ocean has been deeply inscribed into the perception of the Netherlands, for example, among both those inside and those outside the country. When a river became the focus of competing claims, as with the Rhine, then this essentialist link between the river's imagined attributes and regional character was all the more crucial to nationalistic myths.³ Some national narratives have also described the transformation of existing rivers and the construction of artificial ones (in the form of canals) as feats that could be achieved only by powerful states, thus glorifying empires and extending their economic reach. Such was the case with China's Grand Canal, the oldest parts of which date back to the fifth century BCE.

Yet despite the power ascribed to them, in historical narratives rivers have typically been treated as a neutral setting rather than a dynamic force regarded as merely the backdrop against which human history unfolded.⁴ Only in recent decades have historians begun to pay attention to rivers themselves, addressing the topic of environmental change in waterways and building on the work of geomorphologists and biologists who have studied the human impact on rivers over time—impacts that may be direct (within the river channel) or indirect (outside the channel).⁵ Very often, environmental changes occurring at some distance from a river have modified not only its water quality but even the course of the river itself. The rise of the fur trade in the American West, for example, which resulted in the killing of hundreds of thousands of beavers, rapidly affected regional waterways. By drastically reducing the number of beaver dams, the fur trade increased sediment transport, which, over time, changed the paths of many rivers and streams. Timber harvests in mountainous regions have similarly altered the courses of rivers around the globe—from the Alps to the Andes, from the Urals to the Rockies. In Europe and North America the construction of roads and urban development have had an enormous impact on individual rivers; building a road or a town affects vegetation and the movement of topsoil from the surrounding terrain and, eventually, a river's flow.⁶

What is more, the shape of many European and North American rivers has changed dramatically over the past century and a half. While early modern science had envisioned and begun to sustain a discipline of hydrology, it was only in the nineteenth century that rivers in these parts of the world were radically transformed by experts acting on behalf of centralizing nation-states. First and foremost was the continued use of rivers for transportation. Several European countries and the United States also engaged in a frenzy of canal building similar to the engineering euphoria that resulted in the con-

struction of national road networks in the mid-twentieth century. The 240-kilometer Canal du Midi extended the Atlantic rivers of France to the Mediterranean by 1681; the canal craze in Great Britain transformed the English landscape during the second half of the eighteenth century; and in the United States some 4,400 miles of artificial waterways had been built by 1830. Because canals came to be seen as the ideal means of transporting goods, rivers were increasingly engineered to resemble these artificial waterways.⁷ In order to accommodate growing cargo loads and larger barges, river channels were standardized in width and depth, which required dredging on a scale previously unseen.

In addition, riverbeds were straightened or, as the experts' jargon of the time would have it, "corrected." The goal of these undertakings, achieved with varying success, was flood prevention and management. While relatively undisturbed rivers will change their lateral course in response to the amount of water they carry, hydrologists and engineers of the nineteenth century sought to replace such vacillations with smooth, predictable, and, in effect, shorter rivers. One of these engineers, Johann Gottfried Tulla of the southwestern German duchy of Baden, used martial analogies to describe his work. For him the malarious Rhine was the enemy to be conquered and pacified.⁸ While such metaphors are now eschewed, the most important institution for river design and management in the United States today is still a branch of the military, namely the Army Corps of Engineers.⁹ Since the Civil War, the Corps has rendered some twenty-six thousand miles of waterways navigable to vessels drawing nine feet, thus turning the United States into one of the world's most extensive hydrological systems.¹⁰

The centerpiece of this system is, of course, the Mississippi, the catchment area of which covers some 40 percent of the continental United States. Nineteenth-century observers thought of it as "nature's highway to market," an artery for midwestern agricultural products and southern cotton to be shipped out of New Orleans. As early as the 1830s, the federal government began to remake the river for transportation purposes. Shoals and sandbars were removed, rocks and rapids were dynamited to provide clear passage, and meandering sloughs and backwaters were closed off to confine water flow to the main channel. From 1878 to 1930, the U.S. Congress authorized three major navigation projects for the Mississippi that ultimately produced a nine-foot navigation channel. Dozens of locks and dams became necessary components of this vast technological system. Such structures represent both the best and the worst of public works; while they eliminate environmental impediments to commerce and settlement, which promotes the circulation of

freight, they also decrease ecological diversity and increase the risk of flooding as a result.¹¹ The devastating force of the hurricanes of summer 2005 on the Gulf Coast dramatically highlighted the weakness of some human and mechanical elements of this system. More than simply the breaching of levees, Hurricanes Katrina and Rita signified a systemic failure. The ineptitude of local, regional, and federal governments brought the existence of this hydrological system to the forefront of public debate—but only for a brief time.¹²

River dams are perhaps the most conspicuous features of modern river management. When the World Commission on Dams surveyed the globe in 2000, it counted more than forty-five thousand large dams. While most beavers and some humans have been damming rivers as long as either species has existed, the scope and scale of dam building in the twentieth century was unprecedented. The U.S. Bureau of Reclamation, the federal agency with oversight for irrigation projects in the American West, became an ardent proponent of professional dam building under central control. The dams were constructed to harness and distribute water and generate energy, but they had symbolic functions as well. The bureau's mega-project, the Hoover Dam outside Las Vegas, has been glorifying the nation and boosting the electricity grid's capacity since 1937.¹³ This iconic structure became the prototype of a worldwide boom in dam building that started in the 1930s. While access to water, flood control, and electricity generation, by themselves or in combination, were driving forces for dam building, their construction and completion often became synonymous with development, economic progress, and even nation building, especially in the recently decolonized countries of the Global South. Dams symbolized not only humans' ability to control natural resources but also the aspirations and optimism of newly created states, particularly in Africa. In South America, the binational Itaipú Dam project was launched by two well-established countries, Brazil and Paraguay; the dam itself was built between 1975 and 1982. It is the pride of Paraguay and provides no less than 90 percent of its energy.

At the apex of global dam building in the 1970s, two or three new dams were commissioned each day on average. The price for this kind of development was high: the World Commission on Dams estimates that between 40 million and 80 million people have been displaced by reservoirs and that the benefits of dams have for the most part been inequitably distributed. Large dam projects have resulted in the loss of forests and wildlife habitats and have diminished aquatic biodiversity. Since the late 1970s, the decline in dam building has been as dramatic as its previous surge, especially in North

America and Europe.¹⁴ However, on the world's largest hydroelectric dam project, the Three Gorges Dam complex on China's Yangzi River, structural work was finished in May 2006, thus providing the stunning antithesis to the deterioration and even breaching of dams in other parts of the world. One historian has aptly called it a "vestige of Soviet-style central planning by specialists who disdain the opinions of affected citizens."¹⁵ The social and environmental costs of the Three Gorges project led to considerable unrest in the 1990s. Today the most important dam building and hydraulic engineering projects are in China and India.

If the current level of public interest in rivers continues, environmental historians will soon have a wider readership. One of the most influential studies to date is Donald Worster's pioneering book *Rivers of Empire* (1985), which focuses on waterways in the American West. Worster argues that the growth of this region—demographically as well as economically—was possible only because of numerous large water projects that dammed and diverted rivers in order to irrigate a landscape that was essentially dry. Ever since John Wesley Powell's *Report on the Lands of the Arid Regions of the United States*, written in the 1870s on behalf of the U.S. government, it has been clear that irrigation was a *conditio sine qua non* for the settlement of the Great Plains and most other parts of the American West.¹⁶ Many scholars and journalists wrote about the importance of rivers west of the Mississippi, but Worster took a structural approach, demonstrating that the need for water not only irrevocably changed many of the landscapes and ecosystems of the West but also led to a redistribution of power and to the rise of new bureaucratic and economic elites. Worster's neo-Marxist approach was inspired by Karl Wittfogel, a German-American scholar of Chinese civilization and architecture who in 1949 offered an ecological interpretation of ancient "irrigation societies."¹⁷ Wherever dams and canal networks were built in the ancient world, Wittfogel argued, a new—and in extreme cases a despotic—elite of bureaucrats came into power and took control of both rivers and people. For such hydrological-political systems and with Imperial China in mind, Wittfogel coined the term *oriental despotism*. Following Wittfogel, Worster saw in the hydraulic apparatus of the American West—the hundreds of dams built throughout the twentieth century, particularly during the 1930s—an industrial variant of the water-controlling societies of the ancient world. The control of rivers transformed not just waterways but society as well and turned the arid West into the "hydraulic West," a concept that is not without its critics.¹⁸

If Worster's interpretation emphasizes technological control and social transformation, another narrative has also emerged, one that focuses almost

exclusively on the (ecological) fate of the river. Even before Bill McKibben's powerful lament *The End of Nature* appeared in the late 1980s, a number of scholars and journalists were writing about "silenced," "raped," or "exterminated" rivers.¹⁹ For these writers, who accepted a master narrative of environmental history as a record of decline, human engagement with rivers inevitably led to despoliation. The Swedish environmental historian Eva Jakobsson observes that such conceptions do not allow historians to fully grasp the complexity of the human-riverine interaction.²⁰ Even so, in much environmental writing the personalities of rivers have fallen prey to the universalizing forces of modern societies. For Philip L. Fradkin, for example, the Colorado River is "a river no more." He describes the Lower Colorado as "the turgid product of pesticide- and saline-laced return flows from the agricultural fields of Mexicali."²¹ Similarly, Blaine Harden's book about the Columbia River is called *A River Lost* (1996), and she refers in its subtitle to the river's "life and death." More recently Ellen E. Wohl has used the term *virtual rivers* to describe streams that have "the appearance of natural rivers but . . . [which have] lost much of a natural river's ecosystem functions."²² Rivers have thus become for these authors sites of loss and indicators of unwarranted human intervention in an otherwise stable natural environment.

Increasingly, however, environmental historians are beginning to shy away from such reductive oppositions. Instead they have begun to understand humans and nature, technology and the environment, as a continuum. Both river systems and human societies are dynamic forces rather than static entities clashing with one another. In his thought-provoking study *The Organic Machine*, Richard White distances himself from interpretations that identify engineering and management of a river with its "extermination" or loss. "The river," he explains, "is not gone": "We have not killed the river. . . . Nor have we raped the river."²³ White argues that these metaphors and juxtapositions, popular though they may be, contribute little to an understanding of how humans have actually altered rivers and how rivers, in turn, have affected human livelihoods: "We can't treat the river as if it is simply nature and all the dams, hatcheries, channels, pumps, cities, ranches, and pulp mills are ugly and unnecessary blotches on a still-coherent natural system."²⁴ White stresses that there is no clear line of demarcation between nature and civilization. Twentieth-century rivers are human creations, he asserts, but also have lives of their own that exist "beyond our control."²⁵

Mark Cioc takes the concept of a river's life one step further. He calls his history of the Rhine an "eco-biography" and points out that the idea of the river possessing a life or a personality is "not altogether out of step with

scientific or commonsense notions of rivers.”²⁶ Rivers, according to Cioc, “seem alive to us”; they even have “a kind of ‘metabolism.’” Like White, Cioc insists that the modern multipurpose river is developed but not dead, a word Cioc reserves for streams that can no longer support fish and other types of flora and fauna.²⁷

Most historians now discuss rivers in terms of permanent or dialectical interchanges between the dynamics of nature and human intervention. Ideas about rivers and water projects—cultural and technological constructions—have changed both the appearance and the function of rivers over the centuries. At the same time, rivers are themselves agents, providers of energy and resources, and a driving force in history.

OVER THE past few decades more historical studies have been written about American rivers than about all other rivers in the world combined. Part of the reason is the important role that water has played in the history of the American West. Since drought is the rule in many parts of the United States, controversies over river dams and reservoirs—water politics and even water wars—have recurred throughout the twentieth century.²⁸ Historians of European rivers have focused more on the environmental and cultural aspects of rivers and less on water politics than have their American counterparts.²⁹ Europeanists have also concentrated on the various social, economic, and cultural functions of urban rivers. This volume is one of the first to offer comparative insights into the history of European and North American rivers.³⁰ As a group, these essays demonstrate not only the many commonalities but also the contrasts between rivers on both sides of the Atlantic. Social and economic needs, ecological values, aesthetic preferences, and national identities have shaped perceptions and designs of rivers in different regions and countries.

It is exactly this wide range of meanings attributed to rivers that David Blackbourn explores. He correlates the cultural and political constructions of rivers in Germany with their material transformation and argues that these two processes are interrelated. Blackbourn’s contribution is also a historiographical one, for his chapter, which is neither a triumphant account of nature conquered by the heroic actions of humans nor an elegiac narrative bemoaning the loss of a supposed natural state, helps readers to understand the broader role of rivers in history. Isabelle Backouche traces the Seine’s varying role for different classes of Parisians. By the early nineteenth century, she asserts, the river had ceased to be a gathering place for the social elite and had instead become the center of urban activity and national commerce.

Less important as a political capital than as an industrial one, the city of Pittsburgh allowed pollution of its rivers by regional coal and steel producers for much of the nineteenth and twentieth centuries. Timothy Collins, Edward Muller, and Joel Tarr examine the Allegheny and Monongahela rivers, which converge in Pittsburgh and become the Ohio River. These three waterways were crucial to Pittsburgh's growth and economic vitality. In fact, the perception of the Allegheny, Monongahela, and Ohio as simply part of the area's natural-resource network continued well into the twentieth century. Only recently, the authors argue, has Pittsburgh embraced the three rivers on which it had figuratively and literally turned its back for many years.

Dorothy Zeisler-Vralsted takes on the task of comparing two of the world's largest river systems, the Mississippi and the Volga. Despite the sharp contrast between the American and Soviet political systems, the outcomes of engineering projects undertaken on both waterways during the twentieth century were remarkably similar. Zeisler-Vralsted also notes the contrast in political culture, with localized management of the Mississippi and a more centralized decision-making process in the case of the Volga. Fundamentally, however, both processes were driven by ideologies of modernization and development.

Jacky Girel analyzes the interactions between socioeconomic and environmental factors in the reshaping of the Isère River in the Alpine piedmont. Beginning in the eighteenth century, regional administrators responded to fears of marsh fever and flooding by employing university-trained experts to channelize the river. Many locals were opposed to these drainage projects, which disrupted their traditional forms of agriculture. Girel examines the goals and conflicts that have made today's Isère a striking expression of the nineteenth-century alignment of state power with expert knowledge.

Charles Closmann shows how the growing demand for potable water in the burgeoning industrial areas of Yorkshire and the Ruhr resulted in a delicate balance between economic growth and pollution control. In both regions, coal and steel industries dominated the landscape and the economy, yet the responses of local governments varied. Closmann traces a gradual evolution of laws regulating waterways in the Yorkshire valley that reflected Britain's decentralized political tradition. Competition among local institutions over the waterways proved effective in improving water quality. In the case of the Ruhr, the Prussian state and the river cooperatives were the most powerful players in a much more centralized approach to river management. According to Closmann, their tendency to ignore local input manifested a blatant disregard for the local environment and for ecological concerns.

Especially after World War II, rivers in individual nations such as France and Germany were increasingly viewed as “European” rivers. In his study of the Rhine, Thomas Lekan notes the shift in emphasis from nationalist and aesthetic concerns to a wider focus on ecosystem management, pollution control, and habitat restoration. While the Rhine Commission, that river’s multinational political institution, predates European unification by several decades, it established a process that enabled the riparian countries to attain a shared ecological vision.

Ute Hasenöhrl examines the tensions between river tourism in Germany and other interests such as industry, energy production, commercial fisheries, and conservation. All of these interests claim to be working toward an ideal river, but conflicts among them have frequently required compromise. Through a study of the Lech River in southern Bavaria, Hasenöhrl delineates these clashes and concludes that aesthetic or ecological objectives have generally been subordinated to the demand for increased hydroelectric power.

The book closes with Steven Hoelscher’s analysis of photography and tourism in the Wisconsin River Dells, one of Chicago’s recreational hinterlands since the late nineteenth century. He examines the photographs of Henry Hamilton Bennett, showing how Bennett’s work in a very real sense created the Dells as a tourist destination. By means of Bennett’s photographs, this part of the Wisconsin River—once the site of sawmills and lumber camps—was transformed into a tranquil, picturesque riverscape.

As these chapters demonstrate, waterways have been shaped over time by varying interests, values, and goals. Their constant physical alteration as well as their ever-changing meanings have influenced human history and will continue to do so. By studying the historical changes in and around rivers, historians can also add to the debates now under way in many countries on how rivers ought to be “restored.” Their narratives show that restoration itself is a historically fraught category.³¹ When restoration is the objective, how can we determine which of the successive stages in a river’s existence is the one that engineers and conservationists should seek to recover? Without knowing a river’s history, such a question is impossible to answer. And, as the chapters in this volume make clear, simply expecting a waterway to be restored to its “original” state no longer suffices.

It is our hope that historians will find this volume useful both for its findings and for the questions those findings will generate. Future research on rivers in Europe and the Western world may investigate how techniques of river management have circulated among different cultures. Even if rivers took on national meanings, methods of managing those rivers were often

transnational.³² Another theme that emerges from this collection of essays is the degree to which governments have participated in the constant alteration of rivers, in many cases accelerating the pace of riverine changes, displacing local populations, and dismissing local knowledge. Comparisons between individual rivers and the political authorities that have regulated them would thus be likely to produce interesting analyses. One other promising angle, of the many that could be listed here, is the legacy of colonialism and imperialism for rivers worldwide. Were environmental practices part of the hegemony imposed by colonizers on the states or regions they dominated? What effects did unequal power relations and territorial struggles have on waterways and the communities they sustained? Because rivers have had such a powerful hold over mankind and vice versa, historians have at last begun to exercise their own hold on rivers.