“Taming” the Rhine
A history lesson on unintended consequences
by JONATHAN SHAW

David Blackbourn has an affection for fens and marshes, lush, low-lying polders and high moors of heath and bog. When he leaves his home in Lexington, Massachusetts, to visit the coast, he and his wife walk the creeks and saltmarshes of Essex and Gloucester, north of Boston. The sights and smells of such places, she says, induce in him a kind of reverie. Blackbourn’s sense of personal connection to well-watered lowlands perhaps owes something to his early years, growing up in England, in Lincolnshire, on the edge of the wolds where the land drops down to the coast in a very Dutch-looking picture of tulips and swing bridges. This region, once indeed known as “Holland,” is not a product of natural forces, but is instead the result of a long history of human intervention. Of the fenlands, locals say, “Man took on nature, and won.”

Human dominion over the natural world is ubiquitous in this age, so that now one practically takes it for granted. But as Blackbourn, Coolidge professor of history since 1997, demonstrates time and again in The Conquest of Nature: Water, Landscape, and the Making of Modern...
At left: Peter Birmann’s View of the Rhine from the Istein Cliffs Upriver (1859) depicts what is called “the furcation zone” of the Upper Rhine. Here “the viewer tries unsuccessfully to identify the main course of the river as it winds through a tangle of channels and wooded islands,” Blackbourn writes. “Until the nineteenth century, the Rhine did not flow through one defined bed. In the southern part of the Upper Rhine Plain, the actions of the river created countless channels divided by gravel banks and sandbars. These were built up by the river when it was swollen with floodwaters and its force was greatest, becoming obstacles when the current slackened. Over the centuries, season by season, this cycle created a labyrinthine network of waterways and islands—as many as 1,600 islands in the 70-mile stretch of the river below Strasbourg.” Below: The Oderbruch’s Zehden Marshes, from a seventeenth-century engraving by Matthäus Merian. Though a stylized landscape, it nevertheless shows what Blackbourn describes as “the labyrinthine network of waterways that [once wound] their way across the flats, creating countless islands in the process.”

Germany, the power to effect change is not the same thing as mastery. With rich language, economy of expression, and masterly rendered descriptions of technical subjects, the new book “tells the story of how Germans transformed their landscape over the last 250 years by reclaiming marsh and fen, draining moors, straightening rivers, and building dams in the high valleys,” writes Blackbourn. Such interventions were not new, but their scale and impact after 1750 “changed the face of the land as much as familiar and obvious symbols of the modern age like the factory chimney, the railway, and the burgeoning city.” His account of attempts to control water—where and when it flows, how fast and how deep, and to whose benefit—provides a striking portrait of the German state. And yet, while cleaving to its German subject matter in exquisite, carefully researched detail, the book is much more than the sum of its parts. From the meticulous descriptions of environmental consequences good and bad, from the confident pronouncements of one generation of engineers after another, emerge a complex portrait of humanity’s relationship with the rest of nature. From this history of how the German state sought to instrumentalize the environment—plants, animals, and even people—emerges a universal story, rich in ironies. This is that rare transcendent work that finds application again and again.

Blackbourn, whose scholarship focuses on nineteenth-century Germany, first had the idea for the book while teaching for a year on the Pacific Coast. The physical environment of California, particularly the mountain ranges, astonished him, and he began reading the New Western historians Richard White and William Cronon, who argue that wilderness thinking—the idea that conservation should focus on pristine wildlands untouched by the hand of man—can be dangerous. “White and Cronon would say that it is much more important that we manage our relationship with the natural world better in those areas where humans work and are active,” says Blackbourn. “It is a working relationship.” That makes their views especially relevant to Europe, where by the eighteenth century, he says, “there was very little land left where no foot had ever trod.”

In such a context, handling the history of German conservationists who wished to preserve the status quo, or nature as they knew it, becomes problematic: the nature that one generation of conservationists wished to preserve was often a manmade landscape that had “acquired a patina of naturalness with age.” Blackbourn, like White, therefore tells history in the ironic mode: the conquest of nature is no conquest at all, for natural forces always reassert themselves. In writing this way, Blackbourn is not making claims of objectivity. Keen and careful in his choice of words, even in conversation, he prefers to say simply, “I have tried to be honest.”

Blackbourn begins the story in the 1730s, when the future Frederick the Great of Prussia was 18. In an attempt to escape his overbearing father, Frederick William I, the prince and a friend tried to flee the kingdom, but were caught and tried as deserters. Frederick’s friend was initially sentenced to prison, but the king ordered the young man beheaded and Frederick was forced to watch the execution. For the next two and half months, he lived under guard in the fortress of Küstrin. He was then released to “learn economics from the ground up” by working in the local provincial administration of the Upper Oderbruch, a waterlogged, low-lying agricultural region along the Oder River, where the water meandered through a maze of islands and marshes. Frederick spent his time inspecting buildings, animals, and fields. In the undrained wetlands of the region he saw room for expansion and improved production. The Oderbruch would never be the same.

Blackbourn does not subscribe to a “great man” view of history. But, he says, “If you pose the counter-factual question at its most brutal”—would Germany have remade the landscape in the way that it did had there been no Frederick the Great?—“obviously not.” And so German land reclamation on a grand scale got...
its violent start. Beginning around 1750, Frederick imported engineers to drain and “reclaim” hundreds of thousands of acres of marshland for agriculture, in part by shortening the course of the Oder by 15 miles. This had the intended effects of speeding the flow of water, improving navigability, and reducing the cost of the project. “Here I have conquered a province in peace,” Frederick proclaimed when the job was done—though he was forced to call in the military to guard the construction and used soldiers as laborers to speed the work. Subsequent reclamation followed a similar pattern. The Dromling Marsh alone, “twenty-six miles long and thirteen miles wide...yielded over 220,000 acres of new land,” writes Blackbourn. The reclaimed land was settled by colonists, ethnic Germans brought in from outside Prussia, who were expected to run productive farms.

Later projects were even more ambitious, but followed a similar pattern: drain the wetlands, then move in human populations who could maximally utilize the new resource. In the early nineteenth century, for example, “The Rhine between Basel and Worms was shortened from 220 to 170 miles, almost a quarter of its length... Dozens of cuts were made, more than twenty-two hundred islands removed.” This was viewed as heady progress, a wholesale transformation of the landscape to create new arable territory, whose later consequences, as Blackbourn tells it, were not entirely foreseen. The wholesale destruction of the existing ecology brought benefits such as the elimination of malaria, but the draining and mining of the river’s floodplains led to more frequent and severe changes for

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**At right:** A patchwork quilt of geometrical settlement in the Oderbruch as seen from the air sometime before World War II. The beauty of this “blooming garden” belies the pollution of surrounding waterways by fertilizer runoff and human waste.

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**History of the Historian**

The job of remaking the Mississippi River, Mark Twain wrote in the 1870s, is “a job transcended in size only by the original job of creating it.” In that turn of phrase, Twain captured not only the immense scale of digging and damming of the river, but also the hubris of the men who thought to tame it. That the river’s subsequent history did not unfold as planned—floods arose of unprecedented destructive power, acres of land per hour began to disappear in the delta, and Katrina inundated New Orleans last year—suggests that perhaps the Mississippi project was a case of exceptionally bad planning. But human interventions in the natural world frequently lead to unpredicted outcomes, and David Blackbourn documents them in all their intricacy.

Blackbourn believes that even in our age of “sound bites and simple story lines, with its inbuilt bias against complexity,” it is possible to hold two opposing ideas in one’s head. He fairly embraces complexity. Ask him, for example, how he became an historian of Germany. “There’s a lot of contingency involved,” he says. Though better at literature in school, even as a child he’d been fascinated by picture books of history. And although he’d studied both French and German, he became better at the latter because of time spent in Germany, part of it as an exchange student. And there was a mentor, Norman Stone, who later became his dissertation adviser at Cambridge, who got him excited about the trajectory of modern German history. “It was a time of exciting debates about failed modernization there,” he says, “so it was a mixture of the personal, familiarity with Germany, and the particular influence of one particular teacher.”

His first visit to the United States was also life-changing. Arriving in New York around Easter time in 1976 to visit a friend who was getting her Ph.D. at the City University of New York, he found the city “just mesmerizing.” After four weeks in Manhattan, he discovered on his return to England that he could no longer stand Cambridge—“this fenland town”—and cut short a research fellowship to take a position in London.

His subsequent work has focused on the political, social, and cultural history of nineteenth-century Germany. Blackbourn, who has been at Harvard since 1992 and was named Coolidge professor of history in 1997, is the author of seven books. The best known are The Peculiarities of German History: Bourgeois Society and Politics in Nineteenth-Century Germany (1984), written with Geoff Eley, which argues against German exceptionalism; The Long Nineteenth Century: A History of Germany, 1780-1918 (1997), which chronicles the transformation of Germany from “a land of poets and thinkers” into an industrial and military powerhouse; and Marpingen: Apparitions of the Virgin Mary in a Nineteenth-
At right: A map of the course of the Rhine in 1789 shows how the river snaked across a massive floodplain, constantly changing course in what is called the meander zone. “The basic dynamics were simple,” writes Blackbourn. “Even when the river’s flow was sluggish, the water on the outside of the bends would speed up (to compensate for the greater distance it needed to travel), eroding the far bank and depositing sediment on the near one. Over time, the loops became so pronounced and the neck of the loop so narrow that the river almost doubled back on itself... In some places the floodplain stretched for miles, and at some point in its long history the Rhine would use all of it.” Projects to straighten rivers shortened them and sped the water along; in one project alone, the Rhine between Basel and Worms was shortened by 30 miles. Below: The “cut” in the Rhine at New Pfotz, 1829. To shorten the river, “A channel would be cut along the predetermined new course” allowing the water to “follow the line of least resistance and rush through the shorter route, eventually widening the artificial channel through the power of its current.” However, it took years for the river to become established in a new bed—in the most extreme case, five decades.

Century German Village (1993), which details how economic, social, political, and cultural forces created “a town without men” and set the stage for a series of religious visions.

None of these books appears to presage The Conquest of Nature. But in his portrait of Marpingen, which documents the ways in which life in a single village was connected to the broader currents of the period, Blackbourn moves deftly between the provincial and the societal, and between the past and the present. Of the Marpingen events, he writes, “As a battle of faith against reason, superstition against science, Marpingen seems to fit into a familiar pattern, and some will see uncomfortable parallels with our own time.” With his latest book, overt comparisons to the present hardly seem necessary, so clear are the connections to recent environmental disasters long in the making, such as happened in New Orleans. Much more than an environmental history, the new book reflects Blackbourn’s belief that understanding the broader context of events is critical. As he told an Oslo audience while working on the project, although environmental questions are important in their own right, “if the environmental perspective is to become part of mainstream history...political and cultural associations cannot be avoided.” Nature (including human constructs of what is natural) “is a nodal point where the environmental, economic, social, cultural, and political come together.” He concluded by paraphrasing the contemporary German historian Christof Dipper: “By understanding the human dominance of nature, we learn more about the nature of human dominance.”
cycle of floods that occurred, before the reclamation, each spring and summer...” They had “evolved small-scale local solutions that permitted them to survive and fashion a livelihood from the waters until large-scale state ‘improvement’ came along. We should not overlook this evidence of resourcefulness and ingenuity, wiped out by technological hubris married to state power. Something was lost, and that is one of the registers in which we should tell the history of reclamation.”

The state approach to dealing with floods was the opposite of accommodation. It was war. When it became clear that the “improvements” made by the first generation of engineers had worsened flooding by, for example, speeding the flow of water, later engineers proposed new technological solutions. Rather than adjust to natural cycles, or give the straitjacketed river some room to overflow, they instead proposed the construction of countless dams on the Rhine’s tributaries to better regulate the flow of water. The same language of conquest that had been applied to reclamation now became associated with dam-building. But, Blackbourn notes, dams ultimately defeat their own purpose: as they fill with silt, their capacity to store and regulate the flow of water diminishes.

“History can help us to recognize the power of unintended consequences,” says Blackbourn, “and there is no other area of human endeavor, with the possible exception of war, where the power of unintended consequences is quite so great as it is in human dealings with the environment.” The effect of straightening rivers, ultimately, is to move large amounts of water more quickly to the sea. In times of drought, this hastened the desiccation of the land. And when there were floods, their severity was greatly magnified by the speed of the river.

Writing an environmental history “gives you a very clear picture of how successive generations” have proved fallible in this respect, he writes. “Read the series of confident prescriptions for the Oderbruch, and you find that each set of proposed new measures promises to turn the trick and finally overcome the ignorance, or engineering mistakes, or political mistakes of earlier generations, right down to Werner Michalsky’s claim in 1983 that under East German planning ‘the centuries-old dream of humanity to control the forces of nature has been realized under socialist conditions.’”

The reality was that none of these supposedly definitive solutions—not raising the height of dikes after the inundations of the 1770s, not blocking off the ‘Old Oder’ following the 1830 flood, not the major corrective scheme in the 1850s, not the advent of steam pumps and dredgers, not the new plan in the 1920s that used electrically powered pumps, not the repeated reorganizations of Dike As-
sociations, not even socialist conditions—none of these was able to prevent floods that were now a threat to the work-cycle rather than a part of it. Over a period of more than two centuries, no definitive security against the water could be established in these reclaimed lands. Instead, in a pattern that has become familiar elsewhere, floods eventually became less frequent but more catastrophic when they did occur, right down to the disaster of 1997, the second “once-in-a-century” flood in 50 years.

One of the most startling revelations of The Conquest of Nature is the way it connects German natural and social reengineering in the eighteenth and nineteenth centuries to the atrocities committed by the Nazis in the twentieth. To go from the killing of 11 million sparrows (because they eat seed crops) to the killing of Jews may seem an enormous leap intellectually and morally, but as Blackbourn makes clear, the language of conquest, and even the pattern of state behavior, had been established for 250 years. He tells how Germany’s National Socialist Party adopted the language of land reclamation and took to its...
horrific conclusion the practice of moving the most productive people (in their racist formulation) onto the land, just as Frederick the Great had done. Jews became animals; displaced Slavs were referred to as Indians.

What to do with all the people who had been forced off their farms to make Lebensraum (living space) for German settlers? At first, Blackbourn relates, those who were not fit for working, the women and children, were forced to march into Russia at gunpoint. The first victims of systematic mass gassings were mental patients housed in Polish port cities, killed to accommodate the massive influx of ethnic German immigrants. Eventually this barbaric, utilitarian calculus led to the mass killings perpetrated at concentration camps. Killing and land reclamation became so perversely entwined that at one point, a reference to sending people to the marshes became a euphemism for extermination.

Hitler even invoked the genocide of the Indians of the North American plains (an important source of grain for the world, the Führer noted) as a kind of “moral alibi” for Nazi crimes. Though Blackbourn does not entirely accept the analogy, neither does he believe in German exceptionalism, the idea that Germany took a path before World War II that was so different from any other nation’s.

Reassuringly, he sees a reformed Germany today. Modern Germans will “own” the Holocaust for centuries to come, he believes, and are consequently highly sensitive and attuned to the dangers of bigotry. Their progress is evident in their dealings with nature and with their neighbors, Poland and the former Czechoslovakia. After the devastating floods along the length of the Ober in 1997, Poland planned a series of large-scale, German-style engineering projects to protect the Polish countryside. Downstream Germans, for whom the flooding would be intensified, protested. But there was widespread appreciation of the irony that Poland was merely trying to do what Germany itself had done in the past, and a clear understanding that because the river knows no borders, any solution will have to be international.

Toward the end of his book, Blackbourn takes up the controversial question of “renaturing,” the process of unstraightening mountain streams, replanting forests to retain water, and building artificial floodplains. These fixes are not natural, either, of course, and because there is little free space left for rivers to change course as they normally do, they involve hard choices. Blackbourn admits he would hate to see the Oderbruch, land he has ranged across many times in his “stout walking boots,” given back to the river—and most likely, it will not be. But some people will lose their land. To those displaced, renaturing may not seem any different from Frederick’s reclamation. But “it makes sense ecologically, and it makes sense for the protection of downriver dwellers. Some of this [former floodplain] has to be sacrificed,” Blackbourn says. “This is a case where eminent domain can and should be invoked. Farmers can be compensated.”

If there is a single lesson in The Conquest of Nature, it is that hubris with respect to the environment lives on from generation to generation. As a child, Blackbourn recalls being “mesmerized by the strangeness of time.” Any child who has stood by the banks of a fast-flowing stream and watched as a stick or a leaf floats by has experienced the fascination of the moment about to be lost—the passage of time made visible. As if by magic, an historian has the opportunity to take in, from on high, the full length of the river—to see it as one place, and to collapse time itself. Blackbourn’s long view lays bare our human fallibility. As he modestly puts it, “history cannot make us wise, but perhaps it can make us a little less foolish.”

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