

A BRIEF HISTORY OF RIVER DEVELOPMENT AND RIVER CONSERVATION IN NORTH AMERICA

KRATKA POVIJEST RAZVOJA I ZAŠTITE RIJEKA U SJEVERNOJ AMERICI

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Summary

Author will review the history of private and government sponsored efforts to develop western rivers for navigation, flood control and hydropower, along with the key legal and policy frameworks that supported this. He will also trace the rise of the conservation movement in the early 20th century and its effects on river development, including the more recent effort to preserve »wild and scenic« rivers.

Key words: Environmental History, River Development, River Conservation

Ključne riječi: povijest okoliša, razvoj rijeka, zaštita rijeka

North America is a land of abundant rivers, lakes, and wetlands. Even in the arid portions of the continent, great rivers often flow through otherwise dry valleys. Over the last 1,000 years humans have altered riverine systems to serve a variety of purposes. Prior to the arrival of European settlers the indigenous peoples of North America manipulated river ecosystems for food production, irrigation, livestock forage, fuel, and transportation. Population numbers were relatively low in most regions of the continent so alterations to rivers were generally small scale, localized, and intermittent. Some notable exceptions to this include the Cahokia settlements in the Mississippi River Valley, the Hohokam civilization in the southern Arizona desert, and the Calusa Indians of southwest Florida—all of whom extensively altered their local rivers and wetlands (Krech). Following European colonization, however, the spread of Old World diseases decimated indigenous populations, reducing their impact on riverine ecosystems. This led to large-scale recolonization of natural vegetation over former native villages, farms, and gardens, giving the North American continent a predominant appearance of wildness in the eyes of European colonizers. From the 1600s through the early 1800s Native American influences on rivers steadily declined while European-American influences increased. In both cases, however, before the advent of the industrial era, environmental impacts and structural alterations to rivers remained relatively modest and localized.

The scale and pace of river development and ecosystem change increased dramatically during the 19th century. Population growth, economic growth, political ambition, and engineering expertise combined to launch an unprecedented era of environmental transformation. Fishing, farming, channel dredging, canal building, flood mitigation, construction of water wheels for grain and cotton mills, and the disposal of untreated of urban wastes all transformed river structure and river ecosystems to

a degree and extent never experienced before in North America (Steinberg). This was accomplished through the combined efforts of private sector businesses and government institutions. Landowners and corporations acquired property rights with few restrictions and altered their land to suit their purposes. Regulations to restrain abuses, pollution, and wasteful exploitation were few and weakly enforced. A mobile and libertarian-minded population became inured to rapid change, unrestrained acquisitiveness, and a willingness to migrate to new frontiers in search of new opportunities when local soils and waters were exhausted. Local, state, and national governments encouraged private development and funded public agencies and river development projects. They built harbors and docks, dredged sediment and removed tree snags from navigable rivers, stabilized river banks and straightened river meanders, built canals, and provided loans, franchises, and land grants to private companies to accomplish what was called at the time »internal improvements,« many of which involved river engineering. The U.S. national government created the Army Corps of Engineers in 1779 specifically to engage in river and harbor »improvements.« It remains today one of the most influential river management agencies in the U.S. and is responsible for many of the largest dams and structural engineering works on American rivers (Reuss).

But even this dramatic period of accelerating change during the 19th century was dwarfed by the scale and extent of river development in the 20th century. The Corps of Engineers finally took on gigantic rivers like the Mississippi, Missouri, and Columbia rivers that had remained undammed in the 19th century. The U.S. government created in 1902 a second dam-building agency called the U.S. Bureau of Reclamation to bring irrigation water to the nation's arid regions in the West. These two government agencies grew increasingly more ambitious. Spurred on by a desire to stimulate the economy and to build a sense of pride, hope, and accomplishment during the Great Depression of the 1930s, the U.S. government funded the largest engineering projects in American history: Bonneville Dam and Grand Coulee Dam on the Columbia River. Ambitious dam-building continued from the 1940s through the 1970s stimulated by liberal federal government investments (Reisner; Worster).

The sale of hydroelectric power helped repay the costs of these federal government dams and provided an added stimulus to construct more dams. The lucrative opportunity for hydropower sales also motivated the privately owned electric power industry to embrace dam building in the 20th century. Hundreds of electric utilities and the financial holding companies that owned the utilities joined the Army Corps of Engineers and the Bureau of Reclamation in constructing dams on every feasible and profitable stretch of river (Hirt). From 1900 through the 1970s little, if anything, stood in the way of river development. By the dawn of the 21st century the Army Corps of Engineers' National Inventory of Dams registered over 79.000 dams in the United States. At least 2.540 of them large dams that produce hydroelectric power. By the late 1960s very few free-flowing rivers remained in the U.S., and most of them were in national parks and remote wilderness areas (Palmer 2006).

At the beginning of the 20th century, a »conservation« movement evolved in the U.S. in response to the problems associated with un-regulated, un-coordinated development of natural resources in America's laissez-faire political economy of the 19th century. Conservationists promoted rational, planned, and sustained development intended to minimize inefficiency and maximize social benefit. They abhorred waste, short-sighted development, and concentrations of private wealth and power that left too many Americans impoverished. They were empiricists who believed that science and enlightened government would build and sustain the wealth of the nation and promote broadly distributed prosperity (Hays 1959). Many conservationists also were nature-lovers who supported for the creation of national parks, wildlife refuges, and other forms of nature protection (Fox). But the majority of conservation policy was aimed at improving the outcomes of economic development by ensuring rational, long-term, efficient use of natural resources. Consequently, conservationists were

among those in the first half of the 20th century who advocated for river development. They wanted private development of rivers to be regulated to ensure beneficial outcomes while they also called for public (nonprofit, government-sponsored) development to ensure that river manipulation served broad public interest purposes.

The rapid and largely unfettered public and private development of rivers in the 20th century, along with the extensive pollution of those rivers from cities and industry, led to a cultural and political reform movement in the second half of the 20th century called »environmentalism.« It came out of the earlier conservation movement and shared many of its characteristics, but environmentalism was more widely and popularly embraced by Americans and had broader objectives than just the rational use of natural resources (Hays 1989). The environmental movement also focused on pollution prevention (clean air, clean water, and proper waste management); regulation or prohibition of toxic chemicals (pesticides, industrial solvents, nuclear waste, etc.); and providing environmental amenities to improve the quality of life (clean and beautiful public spaces and access to parks, playgrounds, and open space). Importantly, environmentalists also promoted greater public participation in environmental decision-making and greater government and corporate transparency and openness (Rosenbaum). Like the earlier conservationists, environmentalists also advocated nature protection, but did so in a much more vigorous manner. Parting ways with the earlier conservationists who had supported river development and intensive forest management, environmentalists from the 1960s onward sought greater protections for wild lands and native species and ecosystems. For example, environmentalists convinced the U.S. Congress to pass the National Wilderness Preservation Act in 1964, the National Wild and Scenic Rivers Act in 1968 (Palmer 2004), and the Endangered Species Act in 1973. Each of these laws provided mechanisms for the ongoing designation of protected natural areas and habitats for threatened or endangered species (Czech and Krausman). Environmentalists had come to distrust both capitalist corporations and government agencies like the Bureau of Reclamation, Army Corps of Engineers, and U.S. Forest Service. These government agencies seemed too closely aligned with business interests and too enthusiastic about natural resource development to be entrusted with environmental protection. Environmentalists therefore sought to create laws that gave citizens more influence over government decisions and stronger protections for designated nature reserves (Harvey 2007).

Protecting the few remaining undammed, free-flowing rivers in the U.S. was one of many significant long-term campaigns of the post-World War Two environmental movement. While diverse citizens, fishing interests, and farmers had opposed the construction of large dams throughout the 19th and 20th centuries, they usually lost their battles. However, the political fortunes of anti-dam interest groups began to shift in the 1950s when organized environmental groups, including the Sierra Club, succeeded in blocking construction of a proposed Bureau of Reclamation dam on the Green River in Dinosaur National Monument, named after a nearby famous dinosaur bone quarry (Harvey 1994). Shortly thereafter, in the mid-1960s, environmentalists succeeded in blocking two dams that the Bureau of Reclamation proposed to construct on the Colorado River adjacent to Grand Canyon National Park (Pearson). These high-profile battles brought greater public attention to river politics and greater support for protecting what remained of America's wild, undeveloped rivers. In essence, dams had become commonplace and wild rivers scarce, increasing the latter's value. Moreover, by the 1970s most of the dam sites that were economically efficient and sensible to develop from an engineering standpoint had already been developed, leaving only the most remote or marginal dam sites available. The high costs and marginal benefits of these remaining dam sites made them difficult to sell against a rising sentiment in favor of environmental protection and fiscal prudence. As a result, the U.S. government and private sector investors lost much of their enthusiasm for building more dams. Not content with this passive form of protection, however, citizens lobbied

during the next several decades to designate dozens more rivers for more permanent protection under the Wild and Scenic Rivers Act in a public participatory process that continues to the present (Palmer 2004). While much river and wetland development continues in the 21st century in the U.S., its scale and pace is drastically reduced from the heyday that lasted from the 1890s through the 1970s. In fact, a substantial minority of the contemporary efforts of the two government dam-building agencies is now focused on environmental protection, wetland restoration, river re-meandering, and dam removal (McCully).

In summary, the development of a successful river protection impulse in American society arose in the second half of the 20th century in response to the rapid and widespread environmental impacts of unrestrained river development during the previous one hundred years. River protection resulted from changing values, new government policies responding to citizen pressures, the declining economic efficiency of remaining available dam sites, and recurring citizen action to convince lawmakers to designate rivers and streams and wetlands for protection. Success has been incremental, with some backsliding and many frustrations for river protection advocates during the last 50 years, but over time the accumulated results are impressive.

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