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Christine Meisner Rosen and Joel Arthur Tarr

Journal of Urban History 1994 20: 299
DOI: 10.1177/009614429402000301

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>> Version of Record - May 1, 1994

What is This?
THE IMPORTANCE OF AN URBAN PERSPECTIVE IN ENVIRONMENTAL HISTORY

CHRISTINE MEISNER ROSEN
University of California, Berkeley

JOEL ARTHUR TARR
Carnegie Mellon University

In March 1990, the Journal of American History published "A Round Table: Environmental History" that was intended to signify the coming of age of environmental history as a mainstream history field. In the lead article, "Transformations of the Earth: Toward an Agroecological Perspective in History," the distinguished environmental historian Donald Worster defined the compass and boundaries of environmental history, characterizing the field as the study of "the role and place of nature in human life." Despite the apparent breadth of his definition, he explicitly excluded consideration of the urban environment. Although he declared capitalist technological development to be a central concern, his agroecological perspective demanded that environmental historians confine themselves to the study of how capitalist agriculture had transformed nature over time—that is, they should study farms, not cities. In a related essay, "Doing Environmental History," Worster explained this rural focus, arguing that it was inappropriate for environmental historians to study the built environment because it "is wholly expressive of culture," and as such, separate from the proper object of the environmental historian's concern: nature, the "non-human sphere." Besides, he added, the study of the built environment "is well advanced" in other fields, including "the history of architecture, technology, and the city."

All but one of the other contributors to the Journal of American History Round Table uncritically accepted Worster's agroecological
demarcation of the field. The only dissenter was William Cronon, whose award-winning book on Chicago, *Nature's Metropolis*, was about to be published. While praising Worster for his contribution to environmental history, Cronon gently reproved him for focusing excessively on food production and not enough on other forms of economic production, like industrial production, and for ignoring "cities, highways, slums, factories, hospitals, corporations, military installations, all the many places that give shape to the modern world."

More recently, urban historians have reacted to the narrowness of Worster's agroecological perspective on environmental history. Martin Melosi (whose article on public service development in Houston appears in this issue), for instance, launched one of the first volleys of reaction in the *Environmental History Review* in spring 1993. In "The Place of the City in Environmental History," Melosi declared that it was illogical for Worster to hold that environmental historians should study "human intrusion into the natural world in the form of farming and not in the building of cities and towns" and argued that the "exclusion of cities from the main theme of environmental history seems to be more of a rhetorical device than a well crafted definition." Melosi called on urban historians to build on concepts pioneered by sociologists, geographers, and other social scientists to develop an ecological analysis of city growth and the development of urban systems. He argued that it was imperative that environmental historians study not only the urban built environment but also the impact of the city's built environment on the natural environment.

In March 1993, in a presentation to the American Society for Environmental History, Samuel Hays similarly criticized the agroecological definition of environmental history and described his conception of the field. Hays argued that to understand the impact of society on nature, historians not only have to consider the role of cities in environmental development but also those of science and politics and government regulation and popular culture. In Hays's view, environmental historians must study all the means by which people have organized themselves to act upon the environment over time.

Like Melosi and Hays, we believe that urban historians have much to contribute to environmental history. In light of the growing interest in theorizing about the field, we would like to offer our conceptual-
ization of how cities relate to environmental history, and the environment to cities. In our view, urban environmental history can be framed in a similar manner to Worster's characterization of agroecological history: "the study of the role and place of nature in human life." Where we depart from Worster's construction of the field is that we believe it essential that environmental historians also examine nature's role and place in the history of urban life.

We envisage four dimensions to this study: the analysis of the effects of cities on the natural environment over time; analysis of the impact of the natural environment on cities; the study of societal response to these impacts and efforts to alleviate environmental problems; and, examination of the built environment and its role and place in human life as part of the physical context in which society evolves. This last agenda item has no parallel in Worster's nature-centric agroecological conceptualization of the field but is, we will argue, as much a part of the history of earth's environment as the study of nature.

**THE IMPACT OF CITIES ON THE NATURAL ENVIRONMENT**

For thousands of years cities have placed demands on their sites and on the surrounding countryside for food, water, fuel, building materials, and places for waste disposal. This has altered the earth's natural environment in many profound ways, as the settlement and growth of cities stressed and transformed the land and ecosystems within the borders of villages, towns, and cities. As urban populations grew and land use intensified, city dwellers changed the land they lived on and the ecosystems contained within that land in all sorts of ways. They cut down trees, leveled hills and raised new ones, opened the earth to construct sewers and underground power, transportation, and water systems, put streams and brooks into underground culverts, and filled in wetlands. They killed off pests and other species of flora and fauna native to their locations and introduced new ones. They built houses, factories, office buildings, and churches and landscaped and paved over wooded areas, grassland, and open hillsides. In so doing, they continually transformed natural landscapes and created local microclimates and biological ecosystems within cities.
As far reaching as these environmental changes have been, the city’s impact on nature had ramifications far outside the limits of urban places.10 If we are to understand fully the importance of agriculture’s impact on nature, we must also understand the importance of cities, for it was the development of settled populations with hierarchical social systems supported by farming that stimulated the development of agriculture. In the modern age, the demand of city dwellers for food powered the rise of the capitalist modes of agricultural production that Worster so forcefully urges environmental historians to study. In response to the growth of large modern cities, farmers, using the products developed by university and corporate scientists, expanded acreage, modified the genetics of farm plants, built vast irrigation systems, and developed and put into use chemical pesticides and fertilizers, transforming ecosystems.11

To support the growth of urban populations, city dwellers also dammed and diverted far off streams and rivers to obtain water and power for industry and residential life.12 They built sea and river ports, canals, railroads, and highways for transportation and trade. They stripped the countryside of forests and mined mountains for metals and minerals needed to construct houses, palaces, and shops and to produce an ever-expanding host of material goods. In the process, they altered climate and weather patterns. They changed marine environments and influenced the hydraulic cycle, modifying the carrying capacity of watersheds, thus encouraging flooding. They rerouted water flows and, as in California’s Owens Valley, turned thriving agricultural areas into deserts.13 They polluted air, land, and water with industrial and sanitary wastes, modifying and even destroying natural biological systems. To deal with these problems, they also constructed waste disposal and pollution abatement systems. These developments themselves often further altered air, land, and water ecologies, as, for example, when the construction of tall smokestacks to disperse factory pollution put toxic compounds high in the atmosphere, causing acid rain.14

All of the articles in this special issue touch on the subject of the city’s impact on the natural environment in one way or another. Martin Melosi describes the way the development in Houston of water, sewage, and solid waste treatment facilities contributed to flooding, the
degradation and pollution of the Buffalo Bayou and local streams, the
depletion of underground water supplies and ground subsidence, and
air pollution in the late nineteenth and early twentieth centuries.
Christopher Hamlin describes the stench problems and soil fertilizing
effects of sewage that seeped into a stream used to irrigate crops in
Edinburgh in the early 1800s in his article on the “fetid irrigation”
controversy. The articles by Andrew Hurley and Adam Rome discuss
the subject of the city’s environmental impact in particularly rich
detail. In “Creating Ecological Wastelands: Oil Pollution in New York
City, 1870-1900,” Hurley draws a graphic picture of how the growth
of oil refining and related industries transformed the natural ecology
of the wetlands along Hunter’s Point and Newtown Creek in New York
City during the late nineteenth century. He explains how oil refiners
and other manufacturers destroyed the wetlands by filling marshes and
building bulkheads to prevent flooding and how they killed fish and
damaged oyster beds by dumping oil, sulfuric acid, sludge acid, and
other wastes into the adjacent waterway. In “Building the Dream? The
Environmental History of Residential Development,” Rome presents
an equally bleak and detailed picture of damage done to nature, in this
case by urban residential building. Rome explains the wide variety of
ways that home building and the provision of public services in
residential areas have damaged the natural environment in the 120
years since 1870, causing erosion and flooding problems, using up and
polluting the water in rivers, lakes, and underground aquifers, and
consuming ever growing supplies of wood and nonrenewable re-
sources like coal, natural gas, aluminum, and farmland.

As the United Nations observed in 1974, it is in “the places where
man’s activities are most densely concentrated—his settlements—that
the environmental impact is greatest and the risks of environmental
damage most acute.” These impacts have grown increasingly pro-
found over the past two centuries or so, particularly since the end of
World War II, as urbanization has greatly accelerated. The continued
growth of cities and the spread of the built environment over agricul-
tural and forested areas puts a similar burden on urban historians who
must, like the authors of the articles published here, extend the
compass of their analysis to the effects of city development on the
natural environment.
THE IMPACT OF THE
NATURAL ENVIRONMENT ON CITIES

Besides being an object of the city's influence, the natural environment played a significant role in the process of urbanization. From earliest times, people founded villages and towns in places where nature offered various attractions: in fertile river valleys, deltas, and oases, along coastlines where the natural contours of the land created harbors, and next to rivers that could be dammed for power or used for transportation. They used the resources nature bestowed on them, drawing water from local streams and ponds, underground water supplies, and rain, growing food and ornamental plants in native soils, and eating fish and game caught in nearby water bodies and forests. In these ways, nature gave life to cities.\(^\text{16}\)

In part, this impact of nature on the history of cities was one of passive, uneventful influence. Nature, the land, and its resources were an integral component of urban life from which people drew sustenance, in which they saw beauty and economic opportunity, where they built their homes, where children played and people worked. But this is only part of the story. As an actor in the history of urban development, the natural environment also played a much more dramatic, active, even destructive role. Urban history is about how city dwellers contended with the forces of nature that threatened their lives, their built environments, and the urban ecosystems they had created. Nature not only caused many of the annoyances of daily urban life from which people sought to protect themselves (such as, in the modern age, bad weather, crab grass, bugs, mice, rats, and pigeons), but it also gave rise to the natural disasters and catastrophes that punctuate the history of cities: floods, famines, hurricanes, tornadoes, fires, landslides, drought, and epidemics.\(^\text{17}\)

Nature's importance as a shaper of urbanization is particularly clear for premodern times, when urban people lived much nearer to it than modern city dwellers. Because the residents of ancient cities still lived close to the land, they arranged their personal lives, in large part, around their need to manage their interactions with nature. Such interaction with nature also helped shape their socioeconomic and political systems and their religious and other cultural traditions.\(^\text{18}\)
Nature has also played a fundamentally important role as a determining force in the shaping of modern cities and modern urban life. Two of the articles presented here illustrate this point. In “Sanitary Services and Decision Making in Houston, 1876-1945,” Melosi explains how Houston’s topography, its hot and humid climate, its proximity to the Gulf of Mexico, its propensity to flooding, and its vulnerability to hurricanes and tornadoes helped determine what water, sewage, and solid waste disposal systems got built and how they were altered or replaced. Hurley, in his article on industrial pollution of New York City’s wetlands, similarly explains how the degradation of the wetlands by industry altered the city’s human geography. The arrival of polluting oil refineries and other businesses led to the exodus of affluent residents and an inflow of industrial laborers into the area.

Environmental historians, as Carolyn Merchant observed in a recent plenary session address to the American Society for Environmental History, are only just beginning to acknowledge the agency of nonhuman organisms and natural environmental forces in the history of the world. This is also true of urban historians who study the evolution of modern cities. Although a number have written about the role of great fires, hurricanes, and epidemics in shaping city building, city planning, city politics, and city health care, they have generally not attempted to place these impacts in the context of environmental history to illuminate the impact of nature on the evolution of modern urban societies. Yet, in light of the floods that devastated urban areas along the upper Mississippi River and the terrible fires that ravaged large parts of Los Angeles and San Diego last year, who would deny that the natural environment has played and continues to play a major role as a shaper of urban land use development and urban social, economic, and political change. Clearly, this is an area where urban historians can add to the analysis of the influence of the natural environment in the history of human life.

THE RESPONSE TO URBAN ENVIRONMENTAL CHANGE AND ENVIRONMENTAL PROBLEMS

A third element of urban environmental history is the study of urban society’s response to environmental change. To understand this re-
response requires that urban environmental historians do research on how urban people have made sense of their natural environments over time. As Donald Worster puts it, we must consider how "perceptions, ideologies, ethics, laws, and myths have become part of an individual or group’s dialogue with nature." To understand society’s response, we must also, as Samuel P. Hays has argued, examine how these perceptions, principles, and ideas did (or did not) translate into action either to preserve environmental conditions city people liked or to deal with conditions they considered to be problems. Over time, people have debated the significance of urban environmental problems and used the law and litigation, government regulations, market transactions, social norms, and brute force in efforts to try to control them. In the process, they have contributed to the process of environmental change, speeding, slowing, and altering the direction of ecological transformation.

To understand this aspect of environmental history, we must study how the market system, government institutions, politics, technology, and culture shaped the interactions of city dwellers with the natural environment. As the articles by Hamlin, Hurley, Melosi, and Rose demonstrate, urban historians are well positioned to do this kind of research and to provide insight into these aspects of society’s role in the earth’s environmental evolution. The first three of these authors deepen our understanding of the historical significance of environmental change by situating it in the broader context of the social, economic, political, technological, and cultural conditions of specific cities. The fourth author, Adam Rome, situates his analysis of urban environmental change in the context of legal, economic, cultural, and professional shifts taking place at the national (and international) level. Together these articles reflect society’s attempt to control and shape environmental change as it occurs.

THE URBAN PERSPECTIVE
AND THE BUILT ENVIRONMENT
IN ENVIRONMENTAL HISTORY

Our final point concerns the importance of the built environment in environmental history. The history of the built environment, the
human-made environment, is intimately related to the history of the nonhuman natural world. As the articles in this special issue make clear, the natural and built environments evolved in dialectical interdependence and tension. The former influenced the technologies, materials, and locations chosen to construct the latter, with the built environment, in turn, modifying the land, climate, water cycles, and biological ecosystems of nature in an ongoing process of mutual interaction. Rather than peripheral to the concerns of environmental historians, the built environment is central. The buildings, roads, railroads, canals, and water, sewerage, and power systems and other human-made objects that make up the built environment cover an increasingly large proportion of the earth’s surface. They have defined the physical context in which most people and many nonhuman organisms have lived. Thus the built environment, through its effects upon and interaction with the natural environment, is a part of the earth’s environmental history.

To sum up, the articles in this first issue on “The Environment and the City” illustrate our point that urban historians have as much to contribute to society’s understanding of the environmental evolution of the earth as do historians of agriculture and wilderness. Rather than distract attention from the history of society’s transformation of the natural environment, the urban perspective contributes to the historical understanding of that transformation. Urban historians have long prided themselves for the scope of their vision and their willingness to pay attention to the significance of the history of the built environment in the broader context of urban change. As this first special issue demonstrates, they are still expanding their horizons and, like agroecological historians, are exploring the earth’s environmental history. Their studies can illuminate the dialectical interdependence between cities and nature.

NOTES


3. Alfred W. Crosby, "An Enthusiastic Second," *Journal of American History* 76 (March 1990), 1107-1110; Richard White, "Environmental History, Ecology, and Meaning," ibid., 1111-1116; Carolyn Merchant, "Gender and Environmental History," ibid., 1117-1120; and Stephen J. Pyne, "Firestick History," ibid., 1123-1141. Although all of these authors are critical of aspects of Worster's essay, none criticize its focus on nature and its exclusion of urban issues from the field.


6. Samuel P. Hays, "Comment" on Carolyn Merchant, "Whither Environmental History: An Appraisal of Recent Work in the Field" (presented at the annual meeting of the American Society for Environmental History, Pittsburgh, March 4-7, 1993); see also, Samuel P. Hays, "From the History of the City to the History of the Urbanized Society," *Journal of Urban History* 19 (August 1993), 3-25.


10. Although not specifically focused on cities, a good starting point to understand these changes is B. L. Turner II et al., *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past 300 Years* (New York, 1990).


22. Hays, “Comment.”

23. Of course, this is not necessarily a new development. See William H. TeBrake, “Land Drainage and Public Environmental Policy in Medieval Holland,” Environmental Review 12 (Fall 1988), 75-93.
