



Issue 19
Fall/Winter 2009

sustain

a journal of environmental and sustainability issues

The
Kentucky Institute
for the Environment
and Sustainable
Development

Environmental History





sustain

Editor

Allan E. Dittmer

Contributing Editors

Russell A. Prough

Russell Barnett

Mark French

John Gilderbloom

Lauren Heberle

J. Cam Metcalf

David M. Wicks

Craig Anthony (Tony) Arnold

Cover Design

Tim Dittmer

Design/Layout

Nick Dawson

University of Louisville

Design & Printing Services

The Kentucky Institute for the Environment and Sustainable Development (KIESD) was created in July 1992 within the Office of the Vice President for Research, University of Louisville.

The Institute provides a forum to conduct interdisciplinary research, applied scholarly analysis, public service and educational outreach on environmental and sustainable development issues at the local, state, national and international levels.

KIESD is comprised of eight thematic program centers: Environmental Education, Environmental Science, Environmental Law, Sustainable Urban Neighborhoods, Pollution Prevention, Environmental and Occupational Health Sciences, Environmental Policy and Management, and Environmental Engineering.

Sustain is published semi-annually by the Kentucky Institute for the Environment and Sustainable Development, University of Louisville, 203 Patterson Hall, Louisville, Kentucky 40292.

Send electronic correspondence to r.barnett@louisville.edu



This Publication is printed on recycled paper.

UNIVERSITY OF LOUISVILLE

- 2** The New Environmental History

John T. Cumbler
- 3** Environmetnal History: A Road Map to Today

John T. Cumbler
- 10** The Crash of Ash on Horsehide: an Environmental History of Louisville Slugger

Jonathan Free
- 22** We Mean to Stop Them, One Way or Another: Coal, Power, and the Fight Against Strip Mining In Appalachia

Chad Montrie
- 28** Foiled Plans, Fouled Waters

Sarah Lynn Cunningham
- 32** Parks are for People: A History of Land Use at Bernheim Forest from 1929 to 1950

Erin Henle



Issue 19 Fall/Winter 2009

Cover Photo: Valley of the Drums

A 1,500 barrel dump consisting of 50 gallon leaking drums of toxic materials in a valley in Bullitt county, Kentucky.

The New Environmental History

In this volume of *Sustain*, we have four examples of the new environmental history as being practiced by environmental historians today. Chad Montrie looks beyond the normal actors to find a core of environmentalism among common folk of Appalachia. While traditional environmental histories find the roots of our concern for the environment in the writings of elites or political activists such as Theodore Roosevelt or Gilford Pinchot, Montrie's study brings us into the homes and actions of farmers and miners in the hills of West Virginia and eastern Kentucky. Unlike most popular histories of the conservation movement, Montrie finds that the more familiar conservation organizations were not so much pushing local activists as holding them back. In his focus on local grassroots activism and an indigenous appreciation of the natural world, Montrie opens up our understanding of the origins of environmentalism.

The article by Sara Lynn Cunningham also helps us appreciate a different perspective on environmental history. Abandoning the traditional vision of wilderness and countryside, Cunningham, following in the footsteps of Martin Melosi and Joel Tarr, focuses on the city and its wastes. In an in-depth case study of Louisville's decisions concerning waste and sewage, Cunningham discovers that there is still more to learn about how we come to make decisions about the disposal of waste. She argues that Tarr's understanding about how and why cities made decisions about what type of sewage system to install, needs to be rethought. At least for Louisville, Kentucky the story is more complicated and nuanced than Tarr assumes.

Jonathan Free brings an environmental perspective to the history of a local business. Looking at the emergence of the Louisville Slugger, Free ties together the history of baseball with an increasingly urbanized population's longing for a pastoral past. Free not only links the Louisville Slugger to the growing market engendered by the commercialization of products tied to a game resonating with rural images and ideals, but also to the natural resource that made the Louisville Slugger possible, the nation's forests. Free shows how an environmental angle transforms our understanding of familiar institutions and histories.

Forests and parks have long been a mainstay of conservation history. Textbooks of American history inevitably have several pages devoted to the creation of our national parks and the story of Theodore Roosevelt's and Gilford Pinchot's campaign to protect our national forests. What we know little about is the role of private individuals and foundations in protecting and preserving our non-public natural space. And unlike our understanding of the public battles over conservation, we know little about the conflicts of vision involved in early private conservation activity. Erin Henle's article on Bernheim Forest addresses that issue. Henle investigates the story of a private preserve and how many of the issues that resonated in our national conservation debates also were played out in the establishment and maintenance of private preserves as well.

John T. Cumbler, Professor
Department of History
University of Louisville

Environmental History: A Road Map to Today

**John T. Cumbler, Professor
History Department
University of Louisville**



Most historians date the beginning of the modern environmental movement to Earth Day, April 22, 1970. Earth Day was a response to Senator Gaylord Nelson's call for a national teach-in on the environment similar to those that helped mobilize the anti-war movement against the atrocity that was occurring in Viet Nam, to call attention to the need to protect and maintain our world. Nelson's call was very timely. Americans were still experiencing a period of unparalleled prosperity that was rooted in the reforms of the New Deal and Fair Deal of the 1930s and 1940s. Thanks to the unionization of a third of the workforce, government housing and education programs, and the New Deal labor laws and retirement system, a majority of Americans enjoyed a forty hour work week, paid vacations, security in old age, and a relatively high level of education. Increasingly Americans used their vacations to get away from the city and recreate in local, state, and national parks. They bought homes with large back yards, put out bird feeders and sat back to watch their children grow up healthy, educated and happy.

For, especially white Americans, the twenty-five years following World War II were good times.¹ But they were also trying times. Despite the early successes of Lyndon Johnson's war on poverty, government funds were increasingly being drawn away from domestic programs to pay for the politically and morally problematic war in Viet Nam. The children who flooded into the expanded higher education system began to use their education to challenge the status quo and the assumptions behind it. African-Americans long denied not only access to the American dream but also basic American liberties guaranteed by the constitution, challenged segregation, discrimination and unequal opportunity. This challenge manifested itself in demonstrations, court actions, and civil disobedience. As the war in Viet Nam dragged on, more and more young people took to the streets and the voting booths demanding its end. The energy released by the civil rights movement and the student and anti-war movements not only energized a generation, they also worked to democratize American politics.

In such a context, Nelson's call for a day of action in support of the environment fell upon receptive ears. Environmentalists from a wide range of opinions embraced the idea, and to quote

Senator Nelson, "it began to be carried by its own momentum." Under the general direction of Denis Hayes, Earth Day was planned to reach the broadest possible constituency. As many as twenty million Americans from all walks of life marched, held teach-ins, rallies, festivals and demonstrations to demand the nation take notice of its environment and act as better stewards. Although they were not the organizers of Earth Day, the concern over the environment raised by Earth Day was soon felt by older conservation organizations. Membership in the Sierra Club jumped almost 50 percent while the Audubon Society grew from 120,000 in 1970 to 400,000 by the end of the decade. Congress pushed through the Clean Air Act in 1970 and followed with the Water Pollution Control Act of 1972.

The modern environmental movement had an impact on college campuses as well where the practice of teach-ins originated. College students were in the forefront of the Earth Day actions, and back on their campuses they asked their professors probing questions about the environment and how it should be protected. Many of these professors were themselves activists in this new movement and ready for these questions. In disciplines from the sciences to the humanities, including history, academics began to ask how they could bring their subject areas to address the questions being asked about the environment.

Historians study the past. They are interested in change over time and what accounts for that change and what the impact of that change is. Many historians also believe that understanding the past and removing myth and false assumptions about the past will help us better understand the present and better equip us to make intelligent decisions as we move forward. Historians concerned about the environment came to believe that if we better understood the history of our interaction with the natural world, how we have changed that world and how it has changed us, how we have understood our physical world and the consequences of our actions and beliefs, we might be in a better position to make intelligent decisions about the future. We might be able to see alternative possibilities and better avoid destructive patterns of behavior.



Although historians tend to date the beginning of the modern environmental movement at Earth Day, 1970, they also recognize that concern over the environment long predated Earth Day. There are the writings of Henry David Thoreau in the mid-19th century and George Perkins Marsh, both of who gave us a realization not only of human impact on the environment, positive and negative, as well as a call for altering our destructive and ravenous relations with the natural world.² By the end of the nineteenth century, several writers and activists were calling attention to our wasteful use of resources and how we needed to redirect the way we interact with nature. John Muir (founder of the Sierra Club in 1892) began writing popular accounts of the natural beauty of the west along with calls to protect that beauty. Hunters and wildlife enthusiasts such as Theodore Roosevelt, and George Grinnell, editor of *Field and Stream* and one of the originators of the Audubon Clubs, founded the Boone and Crocket Club to protect habitat for wildlife. Public health advocates like Helen Swallow Richards, Alice Hamilton, George Warring and Henry Ingersoll Bowditch, and community activists such as Jane Adams, and those involved in municipal women's clubs publicized the dangers of air and water pollution and called for clean and safe environments. Politicians such as Teddy Roosevelt and foresters like Bernard Fernow and Gilford Pinchot were increasingly calling attention to the wasteful and destructive exploitation of the nation's natural resources. Historians have tended to view these voices and actions as the origins of the modern conservation movement .

The conservation movement itself was divided between those such as John Muir who were calling for the preservation of the nation's beauty with the creation of protected places, national parks, where Americans could come and contemplate nature's wonders, and those such as Gilford Pinchot who believed the nation's resources should be used but in a rational, reasonable, and sustainable fashion. The conflict between these two views of conservation broke into the open when Gilford Pinchot supported building a dam and flooding the Hetch Hetchy valley. Muir considered the act a crime against "nature's cathedral" while Pinchot felt it was a practical answer to the crying need for water in San Francisco.

For the first generation of environmental historians, the histories of this early conservation movement, their controversies and the philosophies behind them, were the heart of environmental history. Yet as the environmental movement embraced not just conservation but a new view of the environment that encompassed the concept of ecology , environmental historians began to look deeper at their understanding of history. Although John Muir and George Perkins Marsh articulated the idea that nature was a complex interdependent system and that a major disruption of one part of the system radically effected the whole, it took the scientific work of Eugene Odum in the 1950s to awaken scientists to the idea that plants and animals evolve together in an eco-system. These ideas were popularized by Aldo Leopold in his posthumously published *Sand County Almanac* and Rachel Carson in a series of popular articles and books.⁴

Three historians, Donald Worster in his book, *The Dust Bowl: The Southern Plains in the 1930s*(1979), Sam Bass Warner in *The Way We Really Were*(1983), and William Cronon in *Changes in the Land: Indians, Colonists, and the Ecology of New England*(1983), broke new ground for historians by using an ecological approach to looking at historical change.⁵ Such an approach required the historian to look not only at human activity but also to how that activity affected the natural world and how the natural world affected human activity. They brought the historical stage, so to speak, into the story of history. If plants and animals are interconnected in an eco-system and the behavior or existence of one effects the others, then humans also act within an eco-system and effect the existence of plants and animals and are effected in turn by their existence in that eco-system. Although this seems fairly sensible today, much of past historical writing, with the exception of historical-geography, was written as if the natural world were a simple empty stage upon which human's constructed their history without regard to the underlying world.

Just as Earth Day encouraged historians to look at the environment, so to did changes in the environmental movement encourage historians to broaden their historical inquiry. As early as 1962, Harry Caudill, a newspaper publisher from Kentucky, wrote *Night Comes to the Cumberlands*, a devastating critique of the environmental and human exploitation of the hill country of eastern Kentucky. That same year, a marine biologist, Rachel Carson, in her now famous, *Silent Spring*, called attention to the problems of chemical pesticides in our environment. Taking an ecological perspective, Carson argued that when we spray chemical poisons into the environment, not just the targeted pest is harmed. Although smeared by the chemical industry as a crank, Carson's work caught the attention of hundreds of Americans and got people thinking about how modern life might be poisoning the planet. Following the publication of *Silent Spring*, Americans also began to notice more and more examples of how modern life was compromising the very world we depended upon. Newspapers and magazines began printing stories about the death of Lake Erie and the Cuyahoga River that was so badly polluted it caught fire. In late 1978, a small working class suburb in Niagara Falls, New York captured the nation's attention when a homeowner, Lois Gibbs, who thought she was moving to a nice safe neighborhood to raise her children, realized that the series of unusual illnesses that plagued her family were also affecting her neighbors. An investigation by local residents showed a pattern of unusual illnesses among the families of Love Canal. It turned out that their nice safe neighborhood had been built on a toxic waste dump of the Hooker Chemical Company. The company had dumped chemical wastes in an old canal bed and then filled it over without informing the neighbors that their community sat upon a toxic mix of industrial chemicals. A school and playground were then built over the waste dump. When the Hooker Chemical Company and local officials ignored the concerns of the community, Lois Gibbs organized demonstrations in front of public officials and eventually took her case to Washington. Gibbs and her neighbors were so frustrated that at one point 500



of them confronted two EPA officials and held them hostage for five hours until someone finally took their concerns seriously. The leaders of the Love Canal campaign were women as symbolized by one of their more dramatic demonstrations, a “Mothers’ Day Die-In.” Soon other women’s groups were organizing to protest corporate generated toxins and their threat to community health.

Dramatic fish kills that followed excessive chemical loads brought the problem of water pollution to public awareness. With the expansion of vacation time and increased prosperity, more and more Americans were vacationing at local and distant beaches, lakes and rivers and the popularity of recreational fishing grew dramatically. The collapse of fish stocks not only in inland waterways and lakes, but also along the coast enraged recreational fishers and led to public protests over chemicals being dumped into public waterways.

In 1979 a new symbol of corporate irresponsibility and personal greed emerged in Bullitt County Kentucky. After complaints began to circulate about a massive 1,500 barrel dump known as “Valley of the drums” (see cover photo) consisting of 50 gallon leaking drums of toxic materials in a valley outside of Louisville, Kentucky, the EPA launched an investigation that brought to light the frightening underside of the chemical industry’s “better living through chemistry.” Between 1940 and 1980 the production of synthetic organic chemicals increased from less than 10 billion tons to over 350 billion tons. Chemical and industrial companies throughout the north central and northeast United States had been accumulating thousands of tons of highly toxic waste over the years particularly from 1940 to 1980. Increasingly, public landfills were reluctant to take on these wastes forcing industry to look for other sites for their disposal. The original advantage of these chemicals was their longevity. But by the late 1960s people began to realize that longevity had long-term negative consequences for the environment. Their persistence led to a buildup of toxins within the environment, in our waters, soil and air. DDT ingested by birds was leading to weak shells and empty nests. High concentrations of DDT, PVC and mercury lead to warnings not to eat fish caught in our major waterways. Herbicides 2,4,5-T and 2,4-D were building up in soils and waterways. Government studies revealed that over 90% of all Americans have measurable levels of hazardous substances such as ethyl phenol, ethyl benzene, toluene and styrene in their bodies.

Images of the “Valley of the Drums” were published in local newspapers and even found themselves on the cover of *Time Magazine*. Investigators found that companies around the country were simply contracting to whoever came forward to haul away their toxic wastes. In the case of the “Valley of the Drums,” a Kentuckian hauled the drums, many of them unlabeled or with the labels corroded off, to Kentucky and simply dumped them in the valley. The companies where the toxins originated asked no questions and the dumper offered no assurances of safe disposal.

It soon became clear that although the “Valley of the Drums” offered dramatic images, the pattern was not just a Kentucky phenomena. Indeed, toxic dumps began to be uncovered across the country. In Woburn, MA local citizens challenged the W.R. Grace Company, which became the subject of a best selling book *A Civil Action* by Jonathan Harr, and a popular movie. Times Beach, Missouri, was so badly polluted that the entire town had to be permanently evacuated, and in 1982 the EPA attempted to locate a toxic waste dump in a low income African-American community in Warren County, North Carolina. As in the case of Love Canal, local residents organized demonstrations and attempted to block entrance to the community of trucks bearing toxic soil. The demonstrations in Warren Country linked concern over the environment with racial justice leading to a new focus on the problem of environmental justice.

The Carter Administration responded to these revelations with new legislation in 1980, the Comprehensive Environmental Response, Compensation, and Liability Act, known as the Superfund to attempt to address the problem of toxic waste dumps. Although the Superfund is now effectively broke and dozens of toxic areas still need addressing, it did work to clean up some of the nation’s more notorious hazardous sites.

Environmental historians were influenced by these events and focused more of their attention on the historical origins of these problems. They began to look not only at the origins of parks and wilderness areas or the ecological basis of land use, they increasingly began to ask questions about the history of water and air pollution, waste disposal and patterns of discrimination and racism in the citing of toxic dumps. Environmental historians broadened their research interest to urban and suburban spaces, and began to put environmental change in larger regional water-ways and sky-ways perspective.⁷

Environmentalism is now a world-wide movement. Increasingly it has become apparent that what were once local problems are now international, indeed Global problems. Citizen groups from South Asia to the arctic are mobilizing to demand that those in power address the concerns of a livable world. Political organizations-Green Parties-focusing particularly on the environment, contest for state power in several European nations. While Americans are mired in concerns about more petroleum, protecting jobs in a fossil fuel economy, and chanting “drill baby drill,” European countries as well as the Japanese are investing in wind and solar energy projects and technology, and structuring an economy with dramatically reduced carbon footprints. Although environmental activism and actual policy change proceeded at a much more advanced level in Europe over the last 30 years, the United States could rightly claim to have been the originator of that concern. Environmental activism burst onto the world stage from this side of the Atlantic. And just as environmental activism began here, so to did environmental history. American historians dominated the field of environmental history for its first several decades, but increasingly scholars in other parts of the world are



beginning to dig more deeply into the physical world to understand the relationship between people, the environment and change. And just as Europeans have now moved far ahead of America in environmental research, technology and policy, I expect that European historians will also take the lead in the field of environmental history. But scholarship is not an Olympic competition. Environmental historians in North America realize that in a world increasingly threatened by global environmental degradation from collapsed world fisheries, acid rain, growing dead zones in seas, to global warming, the more we know about how we came to this sorry state the better we will be prepared to fend off mindless chants of “drill baby drill,” and proceed thoughtfully to a cleaner, safer, healthier world.

End Notes

1. See Sam Hays, *Beauty, Health and Permanence: Environmental Politics in the United States, 1955-1985* (Cambridge, 1987), Mac Mowrey and Tim Redmond, *Not in Our Backyard: The People and Events that Shaped America's Environmental Movement* (New York, 1993), and Hal K. Rothman, *The Greening of a Nation: Environmentalism in the United States since 1945* (New York, 1998) for a discussion of American prosperity and environmentalism. See Bill Branson, *The Thunderbolt Kid* (New York, 2004) for a description of how middle class America came to appreciate new found prosperity in the 1950s and 1960s.
2. See Henry David Thoreau, *A Week on the Concord and Merrimack Rivers* (1849), _____ *Walden: A Life in the Woods* (1854) , and George Perkins Marsh, *Man and Nature: Or Physical Geography as Modified by Human Action* (1864). For a discussion of the writings of early naturalists see Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, 1995) and Diana Muir, reflections in *Bullough's Pond* (Hanover, 2000).
3. For examples of writings of these early conservationists see John Muir, *The Mountains of California* (1894); Gilford Pinchot, *Breaking New Ground* (1941); Jane Adams, *Twenty Years at Hull House* (1910). For a history of these early activists see John Cumber, *Reasonable Use: the People, the Environment and the State, New England 1790-1930* (Oxford, 2001); and *Northeast and Midwest United States: An Environmental History* (Santa Barbara, 2005); Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, D. C., 1993); Ted Steinberg, *Down to Earth: Nature's Role in American History* (Oxford, 2002). For a discussion of popular concern over the environment see Richard Judd, *Common Lands, Common People: The Origins of Conservation in Northern New England* (Cambridge, 1997); Chad Montrie, *To Save the Land and People: A History of Opposition to Surface Coal Mining in Appalachia* (Chapel Hill, 2003) and _____ *Making a Living: Work and the Environment in the U.S.* (Chapel Hill, 2008). See also Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley, 2001).
4. Aldo Leopold, *Sand County Almanac* (1949); Rachel Carson, *Under the Sea Wind* (1941), _____, *The Sea Around Us* (1951); _____, *The Edge of the Sea* (1955).
5. Donald Worster in his 1979, *The Dust Bowl: The Southern Plains in the 1930s* (Oxford, 1979); Sam Bass Warner, *The Way We Really Were* (Boston, 1980); William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York, 1983).
6. For a general look at American Environmental History that takes this approach see John T. Cumber, *Northeast and Midwest United States: An Environmental History* (Santa Barbara, 2005) and Ted Steinberg, *Down to Earth: Nature's Role in American History* (Oxford, 2002); Ann Vileisis, *Discovering the Unknown Landscape: A History of American Wetlands* (Washington, D.C., 1997); Brian Donahue, *The Great Meadow: Farmers and Land in Colonial Concord* (New Haven, 2004).
7. For concern over pollution see Martin Melosi, *Garbage in the Cities: Refuge, Reform, and the Environment* (College Station, Texas, 1980); _____ *Coping With Abundance: Energy and the Environment in Industrial America* (Philadelphia, 1985); _____ *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore, 2000) and Joel Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron, 1996); Ted Steinberg, *Nature Incorporated: Industrialization and the Waters of New England* (Cambridge, 1991); John Cumber, *Reasonable Use: The People, the Environment and the State* (Oxford, 2002). For concern over fisheries see Margaret Bogue, *Fishing the Great Lakes: An Environmental History 1783-1933* (Madison, 2000) and Arthur McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge, 1986) For a discussion of racism and the environment see Andrew Hurley, *Environmental Inequalities: Race, Class, and Industrial Pollution in Gary, Indiana, 1945-1989* (Chapel Hill, 1995) and Kathlyn Gay, *Pollution and the Powerless: The Environmental Justice Movement* (New York, 1994). For work on the history of urban sprawl on the environment see Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge, 2001); Paul Sutter, *Driven Wild: How the Fight Against Automobiles Launched the Modern Wilderness Movement* (Seattle, 2002).



The Crash of Ash on Horsehide: an Environmental History of Louisville Slugger

Jonathon Free, Graduate Student
History Department
University of Louisville


In 1960, the San Diego *Evening Tribune* featured an article on the trees used to make Louisville Slugger baseball bats. For the article, the *Tribune* interviewed Roscoe Hovatter, a bat salesman for Hillerich & Bradsby, the producers of Louisville Slugger. The paper asked Hovatter if he could foresee a time when the supply of the company's preferred tree, northern white ash, would become scarce enough to effect bat production. "No," Hovatter replied, "not as long as tree farm principles of good forest management are followed on company-owned lands."¹ Nothing in the article meant to suggest that Hovatter was an expert on forestry, and while he was most likely expressing a personal opinion, he also was obviously following one of the cardinal rules of good salesmanship: create confidence in the product in the mind of your customers. But Hovatter's statement also reflected the commonly held assumption of the permanence of natural resources that was still prevalent in America in the mid-twentieth century. What Hovatter could not have predicted was that forty years later, a small green insect would make its way from Asia to North America through international trade routes, and would eventually threaten all of the continent's once abundant ash trees. That insect, the emerald ash borer, that first appeared in North America in Michigan in 1992, had by 1997 destroyed 25 million ash trees. Despite efforts by state and federal authorities, the borer spread from state to state at an alarming speed. In late June, 2007, the borer was first spotted in Pennsylvania, the primary base of Hillerich & Bradsby's lumber holdings.² As a result, for the first time in 2008, Hillerich & Bradsby produced more Louisville Sluggers made from maple trees than from ash.³

Of course, the situation created by the emerald ash borer was not the first time non-human forces altered the course of the Louisville Slugger brand's history. Although the company has produced aluminum bats under the Slugger brand since the 1970s, its most iconic symbol is the wooden bat, and as a result, the history of the Louisville Slugger has been one of constant negotiation with nature. As the most recognizable wooden product of the last century, the changes in the production of the Louisville Slugger illustrate the changing relationship between Americans and their forests. Likewise, baseball's emergence as the "national pastime" was linked to changes in the relationships between humans and the natural world. It's no coincidence that baseball—a game played on a field of grass and dirt using a modified tree branch and cured animal hides as equipment—came of age dur-

ing a time of intensive urbanization and industrialization, as millions of Americans moved from the countryside to the city and left their farms to take up work in factories. The game of baseball became an outlet for the celebration of the pastoral ideal, with the Louisville Slugger as one of its most enduring symbols. Both as a commercial product of the timber industry and as a cultural artifact, the Louisville Slugger helps us understand how the relationship between Americans and their environment has changed in the past one hundred and fifty years.

For something so deeply engrained in American culture, there is surprisingly little literature on the history of the Louisville Slugger. Bob Hill, a writer for Louisville's *Courier-Journal*, has published a popular piece on the general history of the bat, but no scholar has given the social and cultural impact of the Slugger careful consideration.⁴ Regrettably, with the exception of a few historians such as John Betts, the history of baseball also tends towards celebrating the origins of the game rather than examining its significance in light of the social upheaval that led to its early development.⁵ Most of the important work on the cultural significance of baseball has been done not by historians but by sociologists. Robert Henderson's *Ball, Bat, and Bishop* explored the origins of the "stick and ball" games that baseball evolved from, while more recently, Ronald Story and Richard Guttman have tried to understand how baseball, rather than any of the other sports that were developing and growing in popularity in the mid-nineteenth century, became the most popular American sport.⁶ Louisville Slugger's status as a premier cultural icon warrants serious historical consideration on its own, but the company's relationship with the natural world is especially instructive.

J. Micheal Hillerich and his family emigrated from Baden-Baden Germany to Baltimore in 1842, and moved to Louisville a few years later. Hillerich was a wood-worker, and with his son, John Frederick Hillerich opened a woodshop in downtown Louisville in 1859.⁷ For its first twenty years, the shop was similar to any number of local woodworking businesses. Hillerich's lathes created porch posts and stair railings for a rapidly developing river city in constant need of building material.⁸ In the early 1880s, however, the shop began producing baseball bats.⁹ Before the Hillerichs entered the bat business, the company's claim to fame was the invention of a hand-cranked butter churn, and according to corporate lore, John Frederick was reluctant to become involved with baseball, which he saw as a passing fad.¹⁰



The Falls City Slugger, as the bats were known then, became widely popular in a short span of time, and the shop's bat business grew rapidly. By the middle of the decade, the Hillerichs were producing more than 200 different models designed specifically for professional players.¹¹

In 1907, the U.S. Congress created a baseball commission to explore the origins of the sport. A.G. Spalding, already one of the premier dealers of sports equipment, wrote in a letter to the commission that baseball's American origins were obvious. "The game is thoroughly in accord with our national characteristics and temperament," he wrote, and that to imagine it developing independent of America would be unimaginable.¹² In fact, the game of baseball most likely evolved out of a number of stick-and-ball games, all of which had non-American origins. But the game recognizable as baseball does seem to have its origins in the earliest years of the United States. By the early nineteenth century baseball clubs in growing urban centers, especially New York City, were regularly challenging each other to "bass-ball" matches.¹³ As baseball grew in popularity throughout the nineteenth and early twentieth century, an idea of its special connection to America—especially America's past—grew.

While this notion is obviously drenched in cliché, and continues into the present largely as a marketing tool for Major League Baseball, by exploring baseball as a cultural manifestation we can understand how it became so integrally linked to America. The Europeans, who settled in America and eventually created the United States, experienced the transformation of nature at a rate that was unprecedented. Although all civilizations are the product of a negotiation with the natural world, European America was carved out of the natural world so rapidly that truly significant changes in the landscape were observable within the span of a generation.¹⁴ By the nineteenth century, this transformation of the natural world was manifested in rapidly increasing urbanization. From 1790 to 1850, the urban population of the United States grew from five percent of the population to twenty percent.¹⁵ Industrialization and the expanding market economy spurred further urbanization in the latter part of the century. In 1900, the urban population of the nation was thirty million, more than twice the number it was in 1880.¹⁶


The move from rural to urban life meant a fundamental change in the way many Americans interacted with their environment, and led to various ways of renegotiating a relationship with nature.¹⁷ The trend of creating more space and devoting more time for outdoor recreation was one of the most universal ways of dealing with this change. In 1857, after years of pressure from citizens for more open space within the city to provide "refreshment of the mind and nerves," the city of New York began construction on Central Park.¹⁸ Across the nation, urban reformers like Horace Bushnell came to believe that open, green "breathing spaces" within a city were essential to the mental, physical, and spiritual well-being of the public.¹⁹ Baseball's rise went hand-in-hand with these developments.

As more and more Americans moved from rural to urban areas in the middle of the nineteenth century, baseball became a

way to ease the transition to urban life. New urbanites who may have felt adrift after leaving their rural homes, and who often moved between and within cities, were able to find social networks through the baseball "clubs" that organized in the major cities.²⁰ The game was also an outlet for the expression of the ideal of manhood. As a sport, baseball offered more opportunity for individual recognition, and as a result, required more personal responsibility, than a sport like American football, which was also developing during the same time period. Spectators at a football game may have noted the players in control of the ball at any given moment, but often couldn't observe the activities of those who are performing in the jumble of bodies away from or around the ball. Each position in baseball, on the other hand, afforded each player specific and easily observable responsibilities. The player was responsible for defending a certain area, or while on offense, was alone against the entirety of the opposing team's defense, allowing for a more clear demonstration of his masculinity.²¹

Beyond the opportunity to ease the social transition to the city and to display masculine traits, baseball was also an opportunity to reconnect with the natural world in a pastoral setting. In 1838, the constitution of the Olympic Ball Club of Pennsylvania noted that the "bracing and healthy vigor," and the "hilarity and good feeling," garnered from time spent playing baseball in a nearby field or pasture was one of the primary reasons for taking part in the game. In Rochester, the baseball games played in a nearby meadow were hailed as "leisure for rational and healthy recreation."²² As industrialization and urbanization increased throughout the century, the perceived power of baseball to heal physical and psychological wounds grew as well. In 1896, the *Sporting News* interviewed Dr. Daniel Adams, an early member of the New York Knickerbockers, one of early baseball's most influential clubs. Adams obviously viewed baseball as the product of a simpler time, before the scars of industrialization and urbanization could be seen across the land. He recalled playing games on Elysian Fields, a "beautiful spot" during the early nineteenth century, "now cut up by railroad tracks." To Adams, the connection with the natural world found through baseball had transformative power. Once the men in his club arrived at Elysian Fields, away from the grime and grind of the city, Adams reported, "we were free from all care."²³ Baseball's pastoral significance increased with the pace of industrialization far into the twentieth century, and is especially noticeable in literature.²⁴ Baseball became a game synonymous with the beginning of spring, as well as the end of summer, metaphorically powerful times in the seasonal cycle. Furthermore, baseball, unlike football, was played free from the restraints of a clock, and was dependant on good weather. Work that was regulated by a clock was a significant change for new urbanites, used to the less time-oriented labor of the farm, and baseball presented an opportunity for a release from that rigidity. Games were also often canceled because of rain, signaling a dependence on the natural world that recently relocated farmers would have been comfortable with.

In the early years of their bat business, the Hillerichs most likely made bats from whatever wood a player requested. Since



the development of the game, baseball bats had been anything but uniform. Often, the bats would be made out of the “best cedar”, but realistically, “a wagon spoke, or any nice straight stick,” would do.²⁵ Early on, each baseball club developed its own rules for the game, and those normally left plenty of room for bat variation. In 1854, a list of rules for “New York” baseball stated that the ball “shall weigh from 5 1/2 to 3 1/2 in diameter,” but contained no such instructions for bats.²⁶ Five years later in Boston, however, *The Baseball Player’s Pocket Companion* instructed players that the “bat must be round and must not exceed 2 1/2 inches in diameter in the thickest part,” and that it must be made of wood, although it could be of any length.²⁷ Obviously, no stores existed in which a player could simply buy a baseball bat, and there were as of yet no factories devoted to producing them, so players visited local woodworking shops like the Hillerichs’ to have wood transformed into a bat. Dr. D.L. Adams recalled that he often had to oversee the turning of the bats himself to ensure their quality, and that he was “often obliged to try three or four turners to find one with suitable wood.”²⁸

By 1912, ash had become the preferred wood for making the Louisville Slugger, with hickory being the second most popular choice. Ash trees grow mostly along the center of the central hardwood forest, which stretches from New York to Georgia and from Maryland to the prairie. The most common species of ash, the white ash, soon became the most commonly used for making bats. Although the tree is generally intolerant to shade, saplings can grow quickly in the shadows of older trees, making second-growth trunks grow straight, and therefore easier to convert into the billets used to make bats.²⁹ Hickory was more accessible than ash, and was heavier. To some, its weight made it preferable, but eventually players began opting for the lighter bats made from ash. By the mid-nineteenth century, Louisville became an important port on the Ohio, which gave seaboard merchants access to the interior of the country, and connected them to the growing commercial center of New Orleans, on the Mississippi, as well as access to distant baseball markets.

Louisville’s location on the Ohio River meant that in the early years, the Hillerichs could count on being able to attain any type of wood they needed. From its earliest days as a settlement, Louisville benefitted from its location at the Falls of the Ohio. Settlers floated down the Ohio on flatboats to Louisville, where the boats were bought by local merchants and were either dismantled to meet timber supply needs, or used to ship cargo farther down the Ohio to the Mississippi River and eventually to New Orleans.³⁰ In the early nineteenth century, steamboats were introduced to the river, and the new ability to ship goods up the Ohio and Mississippi filled the city with merchants.³¹ By 1834, New Orleans was the premier port of the nation, and Louisville’s connection to it made it an essential part of the river lifeline. The city’s population increased accordingly. Between 1830 and 1840, Louisville’s population doubled to 21,210, making it the twelfth largest city in the nation. By 1850, due to increased river traffic, which brought not only population-attracting business, but a wave of immigration, it was the tenth largest. Most importantly for the city’s wealth of woodshops like the Hillerichs’, though, the river

connected the city to the forests of New England and Appalachia. The river link between the Appalachian Mountains and New Orleans crossed only one fault line, and that was in Louisville.

The city was connected to the New England forests by a complex network of rivers that traversed the north eastern United States. Before European settlement, the combination of natural disturbances and Native Americans who burned swaths of timber for their villages and to improve hunting, created a forest in the New England region that was highly differentiated in age and species. During the eighteenth century, settlers cleared the ash, maple, and beech trees that grew on the sites that would become the most productive for crops, while they harvested white pine, oak, and chestnut for most of their lumber needs. The usefulness and extra capital that timber provided settlers led to great deforestation between 1830 and 1880, when sixty to eighty percent of the land in New England was cleared.³² As the “old growth” forest was being cut, fast growing species like ash and maple squeezed out previously prevalent “pioneer” species such as the white pine, birch, and poplar.³³ Adding to the changes in the forest, caused by settlement, was the impact of the lumber industry. The amount of lumber being cut grew from 1.6 million b.f. to 8 billion b.f. in 1859, and continued to rise.³⁴ The majority of this lumber was cut in New England, especially New York, where the number of saw mills greatly outnumbered those in any other part of the country.³⁵ From there, it was loaded onto boats and floated down river to markets.

In 1912, however, John Frederick Hillerich noted, in an interview with the *Louisville Herald Magazine*, that he preferred to use wood from Kentucky.³⁶ By the middle of the nineteenth century, steamships were plowing up and down the waterways of Kentucky to reach the previously untapped forests of Appalachia. Soon, small one and two-man lumber operations formed throughout the region, cutting down the best trees along the edges of rivers and streams, and floating them to saw mills and settlements downstream.³⁷ By the 1890s, lumber companies had entered the most remote areas of eastern Kentucky where they used the Cumberland River to transport logs to mills in Pineville and Williamsburg.³⁸ Meanwhile, lumber companies were also looking to railroads to help them transport logs to their mills. By 1910, the Louisville & Nashville railroad had also reached Harlan County, where lumber production began to skyrocket as a result.³⁹ Louisville was an ideal location for the production of baseball bats, with ready access to both the New England and Southern Appalachian forests, both of which were rich in the types of trees most commonly used for bats.

Louisville’s role in the national transportation system also helped to spread the word about the Louisville Slugger. Baseball spread across the nation during the Civil War, as soldiers travelled from town to town playing the game in their free time. In the post war period, the game’s transition from an amateur sport to a professional one was fostered by the increasing interconnectedness of the nation’s cities, created by the railroad system. All of the cities which contributed teams to the original National League, including Chicago, Boston, New York, St. Louis, and

Philadelphia, were connected by rail.⁴⁰ Louisville was central in the formation of the league, hosting the discussions that led to it, as well as fielding a local team, the Louisville Grays.⁴¹ Players heard of the Louisville Slugger from each other, and would stop by the Hillerich shop while in town to order a bat of their own. By the late nineteenth century, the popularity of the Louisville Slugger grew nationally as more and more professional players began using the bat, and the company expanded its marketing strategies. In 1905, Honus Wagner signed a contract with J.F. Hillerich & Son to promote the Louisville Slugger, and became one of the first celebrity endorsers of a commercial product. Six years later, Frank Bradsby became a partner in the company. Bradsby, a former athletic goods buyer from St. Louis, Missouri, originated the practice of producing replicas of professional model bats with the pros' signatures burned into the wood for sale to youth.⁴² The idea was a huge success. The ability to use a facsimile of one's favorite pro baseball player's bat eventually made the Louisville Slugger the most popular bat in the country. In the span of thirty years, baseball bats had become the primary product of Hillerich & Bradsby.

By the 1920s, the company was also coming to terms with the limitations placed upon its production by the natural world. It was not alone. Concern with the excessive use of America's forests predated the Civil War and grew throughout the late nineteenth and early twentieth century. Numbers of scientists, philosophers, and government officials from Henry David Thoreau, John Muir and George Perkins Marsh, to Gifford Pinchot, as well as many average citizens had expressed concern over the overuse of the nation's timber supply.⁴³ In 1921, the Report of the Forester to the Department of Agriculture noted the "serious situation as to the timber supply."⁴⁴ The report cited the fact that "three-fifths of the virgin forests of this country," had disappeared and that "a present drain upon our remaining forests," was "over four times their yearly production of wood."⁴⁵ Four years later, Hillerich & Bradsby released a pamphlet to sporting goods dealers citing the fact that timber for bats was growing scarcer. Top quality second growth ash had become increasingly difficult for the company to obtain, and it had become necessary to go farther for it, and to "seek sources of supply in real backwoods."⁴⁶

The company had reason to be concerned. As the demand for Louisville Slugger bats increased, the company's timber consumption continued to rise dramatically. Between 1944 and 1947, the company went from using 532,146 total pieces of ash and 571,157 pieces of hickory to 1,117,377 pieces of ash and 1,525,257 pieces of hickory.⁴⁷ The need to search out lumber in

"real backwoods" continued in the 1940s as ash trees became increasingly scarce. Lumber companies that supplied wood to Hillerich & Bradsby, like K Lumber Company in New Haven, Connecticut, needed to build roads to get to the timber.⁴⁸ Old growth hickory was still more readily available than ash, but by the 40s, the heavy bats that it produced were no longer preferred by modern players.⁴⁹ To help alleviate the lumber supply problem, a number of bat manufacturers and the U.S. Department of Agriculture's Forest Products Laboratory in Madison, Wisconsin, collaborated to design a laminated bat. The laminated bat was made of three pieces of wood, a combination of both hickory and ash, and was designed to eliminate the chipping that occurred with ash bats, as well as to help stretch the supply of wood for bat production.⁵⁰ Although Hillerich & Bradsby claimed to have been experimenting with the technology for thirty


five years, and believed it to create an inferior product, Major League Baseball approved the bat for use in 1953.⁵¹ The laminated bat never caught on with players, though, and Hillerich & Bradsby's lumber issues remained unresolved.

The company decided that the best white ash came from the rocky ridges and hillsides of Pennsylvania and New York and in the mid-fifties, purchased Larimer & Norton, a lumber company with operations in Eastern Pennsylvania and Western New York. With a vertically integrated lumber division, Hillerich & Bradsby now managed its own lumber supply more effectively, and was able to control grading and the quality of wood it received. In 1957, the company opened a manufacturing plant in Strattanville, PA, under Larimer & Norton. The plant, which the local paper described as "situated in the natural range of white ash timber which grows in the northern Appalachian mountain areas," transformed cut logs into billets that were shipped by rail to Louisville to be made into Sluggers. Each day, the wood received at the plant, most of which came from woodlots of local farmers, who had previously used white ash mostly for firewood, was made into 1,600 billets that would later be used to produce bats.⁵² By 1960, continued concern over the supply of quality lumber led Hillerich & Bradsby to create a 630 acre "tree farm" in Warren Co, PA, where it was able to grow many of the trees it used for bat production.⁵³ But, it still received wood from other sources. These were usually small lumber operations in towns like Grantsville, Maryland, or like Earl Hagan's of French Lick, Indiana, who collected wood from loggers in Kentucky, Indiana, and Southern Illinois, and shipped the roughs to Louisville to become Sluggers.⁵⁴

In the 1960s, the U.S. Forestry Service adopted the policy of clear-cutting as its preferred method of harvesting trees, aban-



The ability to use a facsimile of one's favorite pro baseball player's bat eventually made the Louisville Slugger the most popular bat in the country.



doing the forest practice first established by the conservationists of Gifford Pinchot's generation. Before long, the section of the public which took recreation time in the forests as a way to reconnect with nature, began to notice. Clear-cutting was more than just aesthetically unappealing. As historian and ecologist Samuel Hays has written, the destruction of whole forest ecosystems through clear-cutting, "had the potential of moving the interested citizen in a new direction, toward a more complex and more comprehensive ecological view of what had been destroyed and what should be preserved."⁵⁵ The practice of clear-cutting became a rallying cry against the unsustainable practices of the lumber industry, and every segment of the industry began to feel the pressure. Hillerich & Bradsby was no exception. In 1971, corporate executive Jack McGrath composed a hand written memo titled "Our Answer to the Ecology Racketeers." In it, McGrath observed that "with many sincere and insincere folks jumping on the ecology wagon to make a fast buck, we should be ready for someone to bring out that six million bats use up a lot of trees." McGrath noted that the company's tree consumption meant "less foliage, less water, less oxygen, less wildlife, less etc.," and wondered if the company had prepared "statistics on forests," or had information to prove that "ash is self-propagating."⁵⁶

While all sectors of the lumber industry were reluctant to change practices they had developed to increase profits, public and political pressure soon forced ecological forestry on the industry.⁵⁷ Hillerich & Bradsby was in a better position than most to change its practices. Although by the end of the 60s, low-end timber had been more difficult to come by than it was before, the biggest supply problem facing the Louisville Slugger was a lumber surplus.⁵⁸ Thanks in part to hard times in the furniture industry, the company saw an increase in the number of logs it could procure as well as in workers trained to operate lathes.⁵⁹ In 1970, the company's timber yard in Louisville was receiving wood at a faster rate than the factory could take the pieces and convert them into bats. Outdoor stockpiles of wood went unused, which led to more wet, cracked, and fungus infected pieces that weren't suitable for bat production.⁶⁰ In 1972, Larimar & Norton cut back on its timber production, and instead focused on an "all-out" effort to improve the quality of the wood making its way to Louisville.⁶¹ Also, due to the rise of the aluminum bat industry, which came to dominate in every area except for professional baseball, the company saw a drop in the number of wooden bat orders. In 1969, 372,832 wooden Louisville Sluggers had been ordered by baseball teams across the country, but by 1978, that number had dropped to 257,052.⁶²

In 2001, San Francisco Giant Barry Bonds hit seventy three home runs using a bat made out of maple. Soon, other Major League players were interested in testing out maple bats to see if they could achieve similar results. Meanwhile, the emerald ash borer continued to spread across the country, from Michigan to New York, laying its eggs just under the bark of ash trees, where the larva devoured the trees' phloem. Climate change created warmer and more hospitable conditions for the borer, while simultaneously degrading the quality of the ash trees growing in Hillerich & Bradsby's Pennsylvania forests.⁶³ The combination of

the borer and the attention given to Bonds's record breaking season caused a decline in the number of ash bats produced. But a change in baseball bat production brought along by natural causes should have come as no surprise to Hillerich & Bradsby.

The most vital aspects of the company's history have been greatly impacted by the environment. The game of baseball itself developed as the most popular American sport during a time of great social upheaval. As increasing numbers of Americans moved to the nation's urban centers, baseball became a method of reconnecting to the agrarian lifestyles they left behind. Meanwhile, Louisville became a linchpin in the trade along the Ohio River. The Ohio was a lifeline to the interior of the nation, and whole forests worth of lumber flowed down it towards Louisville. Later, railroads and steamboats connected the city to the great Appalachian forests, and brought professional baseball players through town on a regular basis. Above all, the production of the Louisville Slugger has been dependent upon the supply of quality timber. Hillerich & Bradsby's mid-twentieth century attempts to take full control of natural resources and manage them for long-term sustainable yields reflected the widely held belief that although humans had altered the natural world nearly to the point of exhaustion, human ingenuity and reason could nurture the environment back to health while maintaining a certain rate of industrial progress. This concept is one that still informs many of our current discussions on the change needed to meet the challenge of global climate change, and as the emerald ash borer has recently revealed, it is one that we may need to question.

Jonathan Free is a graduate student in the History Department at the University of Louisville, where he studies US environmental and social history. When not spending all of his time in archives, at computer screens, or freaking out about his MA Thesis, he resides with his wife and two sons in Louisville's South End.

End Notes

- 1 "Don't Knock This Wood" *Evening Tribune* (San Diego, CA), 8-19-60, found in the Louisville Slugger Museum and Factory Archives. Box 18, Folder 12 (hereon noted as Slugger Archives Box:Folder).
- 2 "Foreign Insects Attack Trees", *Current Science*, October 19, 2007, 12.
- 3 Correspondence between the author and Daniel Cohen, Curator, Louisville Slugger Museum and Factory, July 28, 2008. In the possession of the author.
- 4 Bob Hill, *Crack of the Bat: The Louisville Slugger Story*. (Sports Publishing Inc.: Champaign, Illinois, 2000).
- 5 John Rickards Betts, "The Technological Revolution and the Rise of Sport, 1850-1900." *The Mississippi Valley Historical Review*, vol. 40, no. 2 (September, 1953), pp. 231-256.

- 6 Ronald Story, "The Country of the Young: The Meaning of Baseball in Early American Culture", *Baseball History from Outside the Lines: A Reader*, John E Dreifort, ed. (Lincoln: University of Nebraska Press, 2001), pp 19-33; Alan Guttman, *From Ritual to Record: the Nature of Modern Sports* (New York: Columbia University Press, 1978).
- 7 Hill, *Crack of the Bat*, 32.
- 8 *ibid*, 33.
- 9 There are several varying accounts of when and why the first Louisville Slugger was made, but the company's preferred story involves local baseball player Pete Browning. According to the origin story, Browning (nicknamed the "Louisville Slugger") was in the midst of a hitting slump when he broke his bat. John A. "Bud" Hillerich, John Frederick's seventeen-year-old son was present at the game, and afterwards offered to make Browning a new bat at his father's shop. Browning broke out of his slump the next day, and thanks to prevalence of superstition that was already endemic in baseball, his teammates began visiting the Hillerich shop, ordering their own bats
- 10 "Louisville To-Day," Consolidated Illustrating Company (1895), Slugger Archives, 65:5.
- 11 *The Cultural Encyclopedia of Baseball*, 78.
- 12 A.G. Spalding to Baseball Commission, July 28, 1907, in *Early Innings*, 289.
- 13 Historians believe that the earliest of these was issued in 1825 by a club out of New York, Dean A. Sullivan, *Early Innings: A Documentary History of Baseball, 1825-1908*. (University of Nebraska Press: Lincoln, 1995), 2.
- 14 In fact, historian Felipe Fernández-Armesto defines the very term civilization as "a relationship to the natural environment, recrafted, by the civilizing impulse, to meet human demands," Felipe Fernández-Armesto, *Civilizations: Culture, Ambition, and the Transformation of Nature* (New York: The Free Press, 2001), 14.
- 15 James L. Machor, *Pastoral Cities: Urban Ideals and the Symbolic Landscape of America*. (Madison: University of Wisconsin Press, 1987), 122.
- 16 Richard Kraus, *Recreation and Leisure in Modern Society*. (New York: Century-Crofts, 1971), 183.
- 17 For a fuller exploration, see Chad Montrie, *Making a Living: Work and Environment in the United States*. (Chapel Hill: University of North Carolina Press, 2008).
- 18 Kraus, *Recreation and Leisure*, 181.
- 19 Machor, *Pastoral Cities*, 146.
- 20 Story, "The Country of the Young", 25.
- 21 *ibid*, 26.
- 22 From *Autobiography of Thurlow Weed in Sullivan, Early Innings*, 2.
- 23 *ibid*
- 24 See Guttman, *From Ritual to Record*, 101-103.
- 25 "A Canadian Ball Game" *Sporting Life*, May, 1886, in Sullivan, *Early Innings*, 6.
- 26 "The New York Baseball Rules," (1854) in Sullivan, *Early Innings*, 19.
- 27 *Baseball Players Pocket Companion*, (Boston, 1859) in Sullivan, *Early Innings*, 20.
- 28 Sullivan, *Early Innings*, 15.
- 29 Ray R. Hicks, Jr. *Ecology and Management of Central Hardwood Forests*. (New York: John Wiley and Sons, 1998), 1; 151.
- 30 George H. Yater, *Two Hundred Years at the Falls of the Ohio: a History of Louisville and Jefferson County*. (Louisville: The Heritage Corporation, 1979), 35.
- 31 *Ibid*, 36
- 32 David R Foster, and John F. O'Keefe, *New England Forests Through Time: Insights from the Harvard Forest Dioramas*. (Cambridge, Mass.: Harvard University Press, 2000), 8.
- 33 Foster and O'Keefe, *New England Forests*, 16.
- 34 Williams, *Americans and Their Forests*, 160.
- 35 *Ibid*, 164.
- 36 Dudley, "Every Knock is a Boost".
- 37 Susan Freinkel, *American Chestnut: The Life, Death, and Rebirth of a Perfect Tree*. (Berkeley: University of California Press, 2007), 20-24.
- 38 John W. Hevener, *Which Side Are You On?: the Harlan County Coal Miners, 1931-39*. (Urbana: University of Illinois Press, 1978), 2.
- 39 Hevener, *Which Side Are You On?*, 3.
- 40 Betts, "Technological Revolution," 235.
- 41 Jewel, *Baseball in Louisville*, 9.
- 42 Jewel, *Baseball in Louisville*, 101.
- 43 Donald J. Pisani, "Forests and Conservation, 1865-1890", *The Journal of American History*, vol 72, no 2 (Sep 1985) pp 340-359, 341; Shaul E. Cohen, *Planting Nature: Trees and the Manipulation of Environmental Stewardship in America*, (Berkeley: University of California Press, 2004), 32; On 19th century conservationists, see also: Char Miller, *Gifford Pinchot and the Making of the Modern Environmentalism*. (Washington, D.C.: Island Press, 2001);



- Andrew McMurray, *Environmental Renaissance: Emerson, Thoreau, and Systems of Nature*. (Athens: University of Georgia Press, 2003); Aaron Sachs, *The Humboldt Current: Nineteenth Century Exploration and the Roots of American Environmentalism*. (New York: Viking, 2006); John Cumbler, *Reasonable Use: the People, the Environment, and the State, New England, 1790-1930*. (New York: Oxford University Press, 2001).
- 44 *Report of the Forester*, United States Department of Agriculture, U.S. Forest Service, Washington, D.C., October 6, 1921., 1.
- 45 *ibid*
- 46 “The Crash of Ash on Horsehide” Mailing from Hillerich & Bradsby to sporting goods dealers, 1925. Slugger Archives, 18:12
- 47 Interestingly, these were the only years in which the company used more hickory than ash, Stanly Held, “Bats”, Summary of Timber Purchase, Slugger Archives, Box 61A.
- 48 Major League Home Runs Are Now Made in East Haven,” *Sunday Register Magazine* (New Haven, CT), June 13, 1948, pg 1. Slugger Archives, 24:19; Gordon Norton (H&B executive) to Frank Eck (Associated Press), July 19, 1944. Slugger Archives, 24:19
- 49 “Hickory Stick,” Hillerich & Bradsby News Release, January 7, 1966. Slugger Archives 2:1.
- 50 Helen M. Davis, “Laminated Baseball Bats,” *Science Newsletter*, March 13, 1954, pp 170-171, 170.
- 51 “Laminated Baseball Bats Win Approval,” *Southern Lumberer*, Nov 15, 1953, pg 57. Slugger Archives, 18:12
- 52 “New Manufacturing Plan Opened Near Strattanville,” unmarked, undated newspaper clipping. Slugger Archives, 24:19.
- 53 “Don’t Knock This Wood,” *Evening Tribune*. Slugger Archive, 18:12.
- 54 “The Birth of a Louisville Slugger,” newsclipping marked “Baltimore”, January 6, 1957. Slugger Archives, 18:12; “Indiana Man Turns Out Baseball Bats,” *Southern Lumberman*, March 1971. Slugger Archives, 18:12.
- 55 Samuel P. Hays, *Wars in the Woods: the Rise of Ecological Forestry in America*. (Pittsburgh: University of Pittsburgh Press, 2007), 5.
- 56 “Our Answer to the Ecology Racketeers,” handwritten memo from Jack McGrath, March, 24, 1971. Slugger Archives 18:12.
- 57 See Hays, *Wars in the Woods*, especially 119-153 on the development of ecological forestry in Pennsylvania.
- 58 Minutes, Hillerich & Bradsby Executive Committee Meeting, September 5, 1967. Slugger Archives, 24:6.
- 59 Hillerich & Bradsby President’s Report, 1969-1970. Slugger Archives, 24:6.
- 60 Minutes, Hillerich & Bradsby Executive Committee Meeting, October 21, 1970. Slugger Archives, 24:6.
- 61 Minutes, Hillerich & Bradsby Executive Committee Meeting, January 14, 1972. Slugger Archives, 24:6.
- 62 “Athletic Goods Situation”, Slugger Archives, 56:1; in the early 80s, however, there was concern over the availability of persimmon wood that Hillerich & Bradsby used to produce golf clubs, “Hillerich & Bradsby Golf Environment Analysis”, 1984. Slugger Archives, 56:3.
- 63 James Donoff Burg, “Bat Bugs” *Sports Illustrated*, vol 106 iss 11 (March 12, 2007), pg 42.



We Mean to Stop Them, One Way or Another: Coal, Power, and the Fight Against Strip Mining in Appalachia

Chad Montrie
Associate Professor of History
University of Massachusetts, Lowell

Despite a wealth of mineral resources, the people of southern Appalachia are by most measures poor. For over a century now, miners have extracted coal from bountiful reserves there and loaded it on train cars to be used somewhere else, in factories or at electric utilities typically beyond the region, with little in the way of a fair return. Property and severance taxes were and are still minimal, while the number of jobs that might pump wages into the local economy has been in steady decline, mostly due to ever more sophisticated methods to increase production with fewer miners. This was, in fact, the main reason coal operators shifted to surface mining after World War II. Simply removing the layers of “overburden” on the side of a mountain, or these days removing the whole top of a mountain, to get at a seam underneath, requires only a fraction of the labor force to extract the same amount of coal. Additionally, operators can treat most of the adverse environmental and social impacts this type of mining causes as ‘externalities,’ leaving state or federal governments and individual property owners to deal with the cost of acid mine drainage, ruined roads, dry wells, cracked foundations, insufferable dust, burst slurry dams, and devastating flooding.

Yet this is not to say that mountain residents have been silent and passive in the face of their ‘colonial’ exploitation. During the 1960s and early 1970s, resistance was particularly fierce. In Pike County, Kentucky, to cite just one example, people organized and engaged in nonviolent direct action as well as industrial sabotage, challenging not only coal operators but also the local political officials (often one and the same) who did their bidding. This happened most dramatically in the summer of 1967, when the Puritan Coal Company threatened to advance on farmer Jink Ray’s land (which they could do in Kentucky because courts had ruled that broad form deeds, separating mineral and surface rights, gave mineral owners the right to extract coal without a landowners consent and without compensation for most damages). To stop the mining, anti-poverty activist Joe Mulloy put Ray and his supporters in touch with the Appalachian Group to Save the Land and People (AGSLP), they established their own chapter, and when a Puritan bulldozer crossed Ray’s property line, a group of nearly twenty-five people stood in the way and

forced it back. Shortly afterward, someone set off dynamite near the mine machinery. “We mean to stop them,” explained retired deep miner Bill Fields, “one way or another.”¹

In the latter part of July, when a Puritan bulldozer tried once more to clear Jink Ray’s land, activists blocked the path again and convinced the governor to cancel the permit, but this was not the end of the matter. In retaliation for the protests, the Pike County Sheriff and the president of the Independent Coal Operators Association (ICOA) visited anti-poverty activists Joe Mulloy and Alan McSurely, to question them about their role in the actions. Several days later, the Commonwealth Attorney and past ICOA president Thomas Ratliff returned with fifteen armed deputies to arrest the two men, as well as McSurely’s wife, and when long-time civil rights and anti-poverty activists Carl and Anne Braden came to bail them out of jail, they arrested them too. The charge was attempting to overthrow the government of Pike County, a violation of a 1920s sedition law. “From what I have seen of the evidence in this case,” Ratliff said, “it is possible that Communist sympathizers may have infiltrated the antipoverty program not only in Pike County, but in other sections of the country as well.” The objective of the antipoverty workers, he claimed, was “to stir up dissension and create turmoil among our poor.”²

After the Kentucky Court of Appeals ruled the old sedition law unconstitutional, coal operators pressured Governor Breathitt to end anti-poverty work in the region, which he did by making a phone call to the federal Office of Economic Opportunity. The next year, a new governor, Louis Nunn, worked with legislators to establish a Kentucky Un-American Activities Committee, which held hearings to investigate “communist” infiltration in activist-minded groups, either to tie up their resources and impede organizing or to shut them down entirely.³ Meanwhile, the Kentucky Court of Appeals made clear that it was still a friend of coal by reaffirming an earlier decision about the unrestricted rights of mineral owners under broad form deeds. “It appears to us that if, as we in substance are holding, the mineral owner bought and paid for the right to destroy the surface in a good faith exercise of the right to remove the minerals,” the justices concluded in



Published statement from women members of the Appalachian Group to Save the Land and People after blocking mining equipment at the Ken-Mark mine in Knott County for 15 hours on January 20, 1972.

Martin v. Kentucky Oak Mining Co., “then there is no basis upon which there could rest an obligation to pay damages for exercising that right.”⁴

Revealing the proverbial iron fist inside the velvet glove, reaction to the Pike County insurgency demonstrated that the struggle there and elsewhere was, fundamentally, about a balance of power. When mountain residents and their allies opposed stripping for the poverty and environmental devastation it caused, they challenged a long-established arrangement of social inequity and political domination, one that worked quite effectively to facilitate the extraction of wealth from Appalachia. That same arrangement is also what led experience-hardened activists to protest outside the law, using various forms of direct action, and to demand abolition rather than regulatory legislation, which could be and was so easily undermined by coal operators. “We are here to consider and evaluate our position under the power of industrial corruption,” Warren Wright once declared at a 1971 “People’s Hearing on Strip Mining.” Because judges and legislators were too crooked and heartless, he insisted, “We must attempt to bypass them.”⁵

With a keen sense of the stakes in the battle, however, coal operators did not respond to the opposition solely with belligerent tactics. In fact, they were much more successful in defending their interests by showing calculated support for minimal regulation. Like their opponents, they understood that any control laws

would be largely ineffectual, despite public statements that this or that bill would make any surface mining completely unfeasible, and they knew that the only real threat was the demand for a surface mining ban. Consequently, trade association representatives, coal company executives, and their allies in legislatures and Congress strategically altered their position on regulatory bills as abolition efforts waxed and waned. This approach ultimately paid off, in 1977, with passage of the Surface Mining Control and Reclamation Act (SMCRA). The law was weak and poorly enforced, as expected, but it provided legal sanction and cover for coal operators’ continued and even more devastating destruction of the land and its people. For activists it was a resounding defeat, and the opposition movement has only recently reformed and recovered.

The Movement and Its Decline

The militant drive to end stripping in Appalachia began in eastern Kentucky, in the mid-1960s, and quickly spread to other parts of the region. Kentucky was relatively late in establishing even minimal controls on contour, area, and auger operations, and it did as little as any state to enforce regulations. This gap in oversight, as well as a combination of steep hillsides and high average rainfall that increased the potential for landslides and flooding, pushed local residents to act. In 1960, Whitesburg lawyer Harry Caudill introduced the first bill in the Kentucky legislature to ban strip mining, and Letcher County resident Raymond Rash complemented that effort with petitions calling for prohibition signed by a thousand supporters. These efforts accomplished little, however, and a 1963 revision of the state’s control law also made an imperceptible difference in how stripping was done. Then, in the spring of 1965, coal operators Richard Kelley and Bill Sturgill began a job in Clear Creek Valley, Knott County, provoking a storm of active resistance throughout the area that did not let up for several years.

The critical confrontation with strippers happened when bulldozers began threatening to cross onto property owned by the stepson of Dan Gibson (the stepson was doing military service in Vietnam at the time), at which point Dan and his neighbors stood in the way. The next day, as clearing resumed, Dan went up to the site with a rifle and again shut down the operation, until he was arrested. When he got to jail, a large crowd formed outside, charges were dropped, Dan was released, and a “big gang of outlaws” gathered to block the bulldozers once more, finally getting a promise from Bill Sturgill that he would not try to mine the family property.⁶ A few weeks later, local residents from Knott, Perry, and Letcher counties gathered for a meeting in Hindman, where they declared their intention to resort to sit-ins, lie-ins, and even guns to keep strip mine operators off their land. “We feel we have been forsaken,” they explained, “that we have no rights when a county sheriff can order a man off his own property and tell him he is trespassing; that he will be jailed if he doesn’t readily comply.”⁷ They also formed the Appalachian Group to Save the Land and People (AGSLP), which in its name spoke to dual concerns for the environmental destruction caused by stripping as well as



the impact this devastation and the inevitable reduction in coal mine employment had on communities.

One of the first initiatives by the AGSLP was a fifty-car motorcade to the state capitol, where activists demanded a meeting with the governor (which he reluctantly consented to), and delivered petitions against stripping with 3000 signatures. That night, Governor Breathitt told a symposium on strip mining that operators would have to improve their methods and reclamation practices or he would have to ask the state legislature for a ban. In the fall, AGSLP also came to the aid of Ollie Combs and her extended family, facing encroachment on their land by a Sturgill operation in Honey Gap, Knott County. The group ran the bulldozers off with guns, but the workers eventually returned when only Combs and her two sons were at home. The three sat down in front of the machinery and were arrested and jailed, but they embarrassed the Governor into public support once again when a photograph of the “Widow Combs,” eating her Thanksgiving dinner behind bars, appeared on the front page of the state’s main newspaper. Breathitt urged all citizens of the state to obey the law but noted that “history has sometimes shown that unyielding insistence upon the enforcement of legal rights by the rich and powerful against the humble people of a community is not always the quickest course of action.” And he had regulators revoke the permit for the strip operation.⁸

Early in the next year, 1966, Kentucky legislators answered the “clamor” in the coalfields with an updated regulatory law, yet at the same time failed to pass a measure that would have required operators working on a broadform deed to get a surface owners consent and pay damages. The still inadequate controls and uneven enforcement, besides the troubles caused by mineral owner primacy, further demonstrated to activists the need for prohibition. So they continued to organize, establishing new AGSLP chapters, including the one in Pike County, and they continued to resist, fighting with petitions, lawsuits, nonviolent direct action, and, by the spring of 1967, industrial sabotage. That April, someone dynamited a diesel shovel at a Kentucky Coal River strip mine in Knott County, and, in the year and a half that followed, shovels, bulldozers, trucks, and other equipment at several other Knott and Perry County operations were destroyed under cover of night.⁹

Counseling against the use of “violence,” but assisting coal-field residents in a variety of important and critical ways, were anti-poverty activists, most of them not from Appalachia. Initially they were college students sponsored by the Council of Southern Mountains, doing service projects like painting one-room schoolhouses, very much in line with a long history of well-meaning outsiders who came to the region to help the supposedly isolated mountaineers. By the summer of 1965, however, the anti-poverty workers were part of the War on Poverty, most employed through the Office of Economic Opportunity’s (OEO) Volunteers in Service to America (VISTA) program, a few others placed by the Southern Conference Education Fund (SCEF), and they shifted to community organizing, taking literally the OEO’s mandate to

encourage “maximum feasible participation of the poor.” Until Kentucky VISTA funding was cut in the wake of the Jink Ray protest, the young activists helped AGSLP with research, press releases, strip mine tours, as well as publishing regular issues of “Strip Mining BULLETIN,” distributed to over 4000 people.

Meanwhile, people in other parts of Appalachia built on years of dealing with under-regulated and laxly enforced stripping, organized their own campaigns for a ban. With the help of anti-poverty workers, for example, West Virginia activists formed the Citizens Task Force on Surface Mining and, later in 1971, Citizens to Abolish Coal Mining (CASM). These efforts had support throughout the state, although the strongest base was undoubtedly in Fayette, Raleigh, and Boone counties, where militant mineworkers were already engaged in a battle with their corrupt union leadership and immersed in an epic fight to call attention to black lung. They understood the threat stripping posed not only to the hills and streams where they lived but also to their jobs. Despite mineworker involvement, however, CASM was ultimately thwarted by the coal industry’s divisive rhetoric, pitting jobs against environment, and by its control over the House of Delegates and Senate, which made legislators primarily accountable to operators and equipment suppliers. When this happened, CASM closed up shop and its leadership helped nurture a region-wide initiative that would work toward redress at the national level.

In line with the new approach, in October 1971, at a meeting in Huntington, West Virginia, representatives from various groups gathered and established the Appalachian Coalition, dedicated to achieving a ban on stripping by federal law. They chose a very outspoken and brash activist, Jim Branscome, as the coalition’s lead coordinator, and they made Richard Cartwright Austin, CASM’s former head and much more reserved in manner, the new organization’s secretary. Later that fall, a number of mainstream environmental groups, namely the Sierra Club and Friends of the Earth, also joined forces to establish the National Coalition Against Strip Mining (NCASM), which was not strictly abolitionist in its outlook or goals. NACSM pledged to work with the Coalition to lobby members of Congress and arrange effective testimony at hearings, but its formation was the beginning of an ominous division within the movement.

The United Mine Workers underwent some big changes too, with equally important implications for the stripping struggle. Control of the union had passed from John Lewis to Tony Boyle in the early 1960s, after which it became anything but responsive to the membership, often colluding with coal operators to negotiate “sweetheart” contracts as well as to block meaningful health and safety legislation. When Boyle hired thugs to murder his opponent in the 1969 election for president, mineworkers in southern West Virginia formed Miners for Democracy. They chose Arnold Miller, a Black Lung Association leader as well as an advocate for banning stripping, to run in the 1972 election, which he won. But with a growing surface mining membership in the UMW, Miller had to hedge on abolition and put the union



behind strong regulatory legislation.

For coalfield residents throughout southern Appalachia, the main argument against stripping was the threat it posed to the land and people. In particular, they objected to its infringement on the rights of small property owners (ruined gardens and orchards, dried up wells, cracked foundations, flyrock missiles in the air) and the way it eroded what remained of mining employment in the region (since surface methods were much more efficient than underground methods). Framing these concerns, as well as providing legitimacy for resistance, was a tradition of natural rights, elaborated by John Locke and enshrined in the Declaration of Independence by Thomas Jefferson. This tradition established rights like life, liberty, and property as inherent and inalienable, not privileges granted by a monarch or any other authority, and it defined the purpose of government as protecting these rights, granting people the right to alter or abolish the government when it failed in this primary purpose. Faced with the tyranny of the coal industry, which had taken over their legislatures and courts, Dan Gibson, Bessie Smith, Madge Ashley, and others believed they were duty-bound to act, and justified in acting outside of the law.

In fact, it was the spreading uprising in the coalfields that forced operators and trade groups to shift their position on control laws. Initially, they claimed that any regulations would be the coal industry's death knell, and some tried to fight all attempts at change, but once local people began pressing for a state ban, state regulations became more attractive. Friends of the coal industry in West Virginia's legislature, for instance, saved surface mining only by agreeing to a temporary two-year halt on all stripping in the state's twenty-two still unmined counties. The final law also increased performance bonds (forfeited by negligent operators), required the construction of approved drainage systems, and mandated delayed blasting techniques. On paper, this seemed like the Assembly was getting tough with the industry. Perhaps indicative of the weakness of the legislation and its expected inadequate enforcement, however, the president of the West Virginia Surface Mining Association praised it as "fair and equitable." While signing the bill, Governor Moore suggested that, considering "the times and temper," the new control act was a good one.¹⁰

After West Virginia Congressman Ken Hechler introduced the first bill to outlaw stripping at the national level, in February 1971, weak federal regulations earned a new appeal as well. The American Mining Congress "will urge the adoption of realistic surface mining regulation at the state level and will support federal surface mining legislation which is realistically designed to assist the states and the surface mining industry in conducting surface mining operations," the trade industry explained in a statement. "From State-to-State, from place-to-place, it can well be said of mining that its only constant is its diversity," insisted AMC chair Joseph Abdnor. "All such diverse realities of mining," he said, "argue eloquently against any effort to devise other than broad, reasonable Federal guidelines." Yet industry representatives made a point to argue against outlawing surface coal mining.

Reclamation was possible, said National Coal Association President Carl Bagge, whereas prohibition "would have disastrous results for the Nation and its constantly increasing need for energy."¹¹

Despite the connection between direct action, demand for a ban, and the coal industry's steady retreat, the groups that made up the Appalachian Coalition began to focus their attention on lobbying lawmakers. In fact, the last organized, nonviolent civil disobedience against strip mining for almost thirty years happened in eastern Kentucky in 1972. In the first protest, more than twenty women occupied a Sigmon Brothers strip operation in Knott County from early morning to late at night, periodically harassed by rock-throwing workers, who also beat up men waiting in support at the company gate below. When a state trooper came up to let the women know that the men had left for a hospital (chased part of the way by strippers), they decided to end the protest, and found their cars with busted windows, slashed tires, as well as one that was overturned.¹² Later, following spring floods that killed one person and damaged countless homes, gardens, bridges, and roads in Floyd County, activists temporarily shut down a strip mine there as well, blaming the operation for causing unusual run-off. Following that, however, in a strategic miscalculation, opposition to stripping in the southern coalfields largely took the form of writing to members of Congress and sending delegations to provide testimony at hearings.

In line with their modified tactics, the formerly militant activists did what they could to find and connect with allies outside of Appalachia, particularly mainstream environmental groups. Their two main contacts were Louise Dunlap, first at Friends of the Earth and then at the Environmental Policy Center, and Peter Borelli, the Sierra Club's eastern representative. Dunlap started and coordinated NCASM and, with Borelli, they drew on the pressure mountain people could bring to bear in Washington, D.C., but not toward the end of abolition. While people like J.W. Bradley (later head of Tennessee's Save Our Cumberland Mountains) called for "stopping strip mining as soon as possible," and invoked the Declaration of Independence as a warning that people would take matters into their own hands if Congress failed to protect their inalienable rights, the professional environmentalists took a hard line only as a foil to win federal regulation.¹³ "Though no one seriously expects [the abolition bills] to win committee approval," Borelli wrote in the *Sierra Club Bulletin*, "the abolitionists and their legions have been the first to budge these traditionally mineral-oriented committees. As a result, several milder but potentially effective measures that might otherwise have been ignored have earned some credibility."¹⁴

After a couple more years of hearings, Dunlap and Borelli began to make no pretense about supporting a ban and talked instead about "minimum requirements" that they expected to see in any final regulatory legislation.¹⁵ Consequently, with the 'environmental lobby' backing off, support in Congress for a bill to ban stripping began to erode. Representative Hechler responded in frustration, yet he began to waver too. "My people in West



Virginia and people throughout the nation,” he wrote to activists in January 1975, “are getting more and more cynical about compromising politicians, Washington environmental groups who settle for the lowest common denominator, and those who enjoy the transient glory of winning a few commas or semi-colons while the people and the land continue to be exploited and destroyed.” But while Hechler encouraged support for his recently introduced abolition bill, he also noted the importance of defining “the minimum standards you would accept in a regulatory bill.” These included a ban on steep slopes (greater than twenty degrees), no mountaintop removal, prohibition of mining in alluvial valley floors, a ban on impoundments for coal waste disposal, and written consent of surface owners in all cases where surface and mineral rights had been separated.¹⁶

Like members of Congress, once coal trade groups, coal companies, and energy conglomerates saw the movement’s decline, they retreated too. After President Ford twice vetoed weak control bills, in 1974 and 1975, their agenda went back to opposing any federal oversight. The American Mining Congress (AMC) declared that uniform national standards for surface mining and reclamation were “not feasible” and insisted that regulation was best handled at the state level. Anything like the measures just vetoed, it said, would create “a virtual prohibition on surface mining through the imposition of unrealistic and unworkable provisions.”¹⁷ Peabody Coal President Edwin Phelps voiced a similar sentiment. “All major coal producing States have their own functioning programs that regulate surface mining and required sound reclamation,” he explained. “The debate that has raged over this issue has outlived the need for Federal legislation.”¹⁸

The United Mine Workers moved back to support for state-level regulation of stripping as well. Echoing industry concerns, a sizable number of delegates to the 47th constitutional convention argued that a federal law would not recognize the problems and conditions specific to various regions, and the union’s president fell into line. “What works in the hills of West Virginia may not work in the plains of Illinois,” Miller explained, “some reclamation standards that would benefit one area could possibly harm another.” Surface mining and reclamation were both important to the economy and ecology of the country, he said, and protecting the environment was vital “not only for ourselves but more for the use of our children and our children’s children.” The UMW would cease working for legislation to establish federal standards and enforcement, however, and instead work for reclamation laws on a state-by-state basis. This position, dictated in part by the growing influence of surface miners in the union, was largely an effort to shore up coalfield employment. The co-chair of the committee making the recommendation explained that a state-by-state approach was needed “so that we will not put anyone out of work.”¹⁹

In 1977, Congress enacted and President Carter signed federal legislation, although it was not too far from what the coal industry and UMW wanted at that point. The Surface Mining

Control and Reclamation Act (SMCRA) set up a federal-state partnership for oversight, giving most duties to state agencies in good standing, and it was nearly as weak as any bill considered since the start of hearings in 1968. It created an Office of Surface Mining, included a ban against dumping overburden on steep slopes, established an abandoned mine reclamation program funded by a per-ton tax on coal, and empowered citizens to sue negligent regulatory agencies. Yet the law lacked many of the provisions surface mining opponents had called for when outlining their own version of a strong bill. SMCRA allowed stripping on steep slopes and alluvial valley floors, said nothing about coal reserves owned separate from the surface without surface owner consent (except federally owned land), and permitted mountaintop removal (with an allowance for a variance from restoration of slopes to approximate original contour) as well as impoundments for slurry waste.

As meager as the law was, the coal industry and its allies in Congress immediately went on the attack to undermine its implementation. OSM’s operating funds were stalled for several months, delaying hiring and opening field offices, and the Senate held hearings to investigate industry claims that regulations were confusing and too burdensome. By the spring of 1978, operators also had initiated over 100 legal challenges to SMCRA in more than fifteen separate law suits. None of this led to modifications in the law, but it was a shot across the bow, so to speak, and a portent of things to come. SMCRA legalized the destruction caused by strip mining and, in practice, it did little if anything to force companies to shoulder responsibility for what had been and continued to be regarded as ‘externalities’ (ruined land, polluted water, and unemployment). Still, over the next couple of decades, operators persistently tried to undermine even the few provisions in the law which seemed to enhance regulatory power.

In the immediate post-SMCRA era, activism against stripping did not stop, but it did change, increasingly attending to land monopoly and tax inequity, an agenda which had considerable potential to revive a struggle with competing claims for power at its center. Just before the new control law was enacted, eastern Kentucky and southern West Virginia were struck by flooding, caused by heavy rains made much worse by rapid runoff and silt loads from strip mines. Those left homeless found their plight compounded by lack of available land for resettlement, with trailers for emergency housing standing empty on the road because land and coal companies refused to lease or sell property overlying coal they might want to mine later. Sufficiently incited in the months that followed, residents of Martin and Harlan counties in Kentucky, established several community groups to help people in the flood’s aftermath and to demand an end to stripping in their area. Across the state border, in Mingo County, West Virginia, the same issues led to formation of the Appalachian Alliance, to “support individuals and communities which are working to gain democratic control over their lives, workplaces, and natural resources.”²⁰

A year later, in 1978, the Alliance created a Task Force on



Land Ownership to study links between land and mineral ownership, property taxes, and poverty in the region, and the Martin and Harlan County activists were involved in the part that dealt with eastern Kentucky. They found startling statistics, like the Pocahontas-Kentucky Corporation's \$76 annual property tax payment on \$7 million-worth of coal reserves in Martin County. Subsequently, in 1981, they established the Kentucky Fair Tax Coalition, which pushed for an increase in the unmined minerals tax and, when that failed, challenged the systematic underassessment of mineral property.²¹ In the meantime, the group transformed itself into a membership organization with local chapters, changed its name to Kentuckians for the Commonwealth (KFTC), and expanded its agenda to include the broad form deed. As a result of unrelenting grassroots mobilization across the state, by the early 1990s, KFTC had not only forced the Revenue Cabinet to adequately assess unmined minerals, significantly increasing taxes land and coal companies paid, but also amended the state constitution to require strippers to get surface owner consent before mining.²²

Gradually, though, the fight against strip mining devolved into a mainstream environmental reform campaign, concerned primarily with better enforcement of SMCRA and the Clean Water Act, and lacking any commitment to confrontational tactics. What happened at Save Our Cumberland Mountains is instructive. The group had its origins in the 1960s and 1970s efforts to abolish strip mining, following failed state regulatory efforts, wanton destruction of surface owners' property by mineral owners working on a broad form deed, and persistent poverty in seemingly mineral-rich coal counties. Leading the organization, from 1972 to 1977, was the outspoken and unwavering J.W. Bradley, a former deep miner who had been forced off his land by the Shemco Coal Company a couple of years before for interfering with a strip operation. He once described efforts by the federal government to regulate surface coal mining as "short-sighted, unrealistic, and a waste of time," and that seemed to be SOCM's position, at least until 1975. On the eve of SMCRA's enactment, however, there was a definite split in the group's membership, with some favoring federal legislation as a small step forward and others holding out for what they saw as the only real solution.²³

When abolitionists lost the argument, Bradley stepped down as president and SOCM morphed into a watchdog of the state and federal regulatory agencies (eventually the Division of Surface Mining lost primacy for inadequate enforcement and the OSM took over entirely). During the years 1978 to 1980, wildcat (unpermitted) operations spread throughout East Tennessee and the homes of several activists were burned, very likely retaliatory acts of arson.²⁴ By the mid-1980s, though, SOCM had settled into a comfortable role filing lawsuits, lobbying legislators, as well as pushing OSM to improve regulatory standards and do better enforcement. Consequently, the organization stopped being a catalyst for community organizing and increasingly focused on expert intervention, which did little to stop the destruction of mountains and communities.

While the opponents of strip mining stumbled, extraction methods evolved beyond the familiar area, contour and auger operations. More and more operators in eastern Kentucky, southern West Virginia, and East Tennessee engaged in what was called "mountaintop removal" (MTR), an exceptionally efficient way to get at usually horizontal Appalachian coal seams. The process not only included leveling mountains and destroying the hardwood forests they sustained, but also dumping overburden in huge valley fills, burying miles and miles of streams, and building massive slurry ponds to hold millions of gallons of wastewater from washing tons of coal, putting whole communities in jeopardy from disastrous, toxic floods.²⁵ Of course, MTR ate away at the remaining mining jobs in the region as well, allowing for record-high levels of production and record-low levels of employment.

When Congress passed SMCRA, most of its supporters had assumed that mountaintop removal would occur only infrequently, in rare circumstances. And perhaps that explains why the law's provisions defining reclamation after a mountaintop operation are so vague. Operators are required to reclaim the land so that it "closely resembles the general surface configuration of the land prior to mining," or the "approximate original contour" (AOC). This standard could make mountaintop removal mining completely impractical in places like eastern Kentucky and southern West Virginia, where grades often exceed twenty degrees. But it has not been interpreted that way by coal companies and regulatory officials contend their hands are tied because nobody agrees what AOC really means. SMCRA does allow some exemptions to the standard, if operators submit detailed plans for development of schools, factories, or public parks before permit approval. Yet regulators have failed to require even that much of operators and the most popular post-mining land uses proposed and approved by regulatory agencies are "fish and wildlife habitat" and "timberland."²⁶

Resurgence

By the twentieth anniversary of SMCRA, even Louise Dunlap admitted that the federal-state regulatory program established by the law had failed. She still believed SMCRA itself was "sound," but cited less than enthusiastic commitment by the White House and Department of Interior. "Even in the worst-case scenario," Dunlap explained, "I expected the Act to be enforced better than it's been."²⁷ Yet that had been the abolitionists' point all along, based on the experience they had with a coal industry capturing regulatory agencies or at least significantly influencing implementation of regulations. The battle that had raged back in the 1960s and 1970s was about the technical feasibility of strip mining and reclamation for some, but for others it was about the imbalance of power, along with the interest coal companies and energy conglomerates had in making a profit, which they believed doomed any control effort from the start. Louise Dunlap never accepted that, KFTC and SOCM seemed to forget it, and new organizations like the Ohio Valley Environmental Coalition, formed in 1987, missed the point altogether. By the end of the 1990s, in fact, the campaign targeting strip mining put little or no



emphasis on the idea that legislatures, courts, Congress, and regulatory agencies were irredeemably corrupt, and it ceased being a running confrontation with the coal industry and individual operators.

There has since been a rebirth of militancy, however, activism marked by a clarity about the links between the environmental and economic costs of surface coal mining, the imbalance of power that undermined even the most well-meant efforts to control it, and the need to use a variety of tactics, including non-violent civil disobedience. Groups like Coal River Mountain Watch, formed by residents of Whitesville, West Virginia, in 1998, are resolutely opposed to mountaintop removal and they have been steadily organizing the local community to hold the line against the Massey Energy Company. In 2004, they were joined by another group of activists, loosely affiliated as Mountain Justice, who set up organizing houses throughout Appalachia. From these centers the mostly young participants have done 'listening projects' and outreach, initiated marches and rallies, and planned direct actions, like lockdowns and sit-ins. At the same time, more exceptionally blunt and forthright leaders have emerged within established organizations like Kentuckians for the Commonwealth, including Teri Blanton and Maria Gunoe, who have a personal experience with strip mining and are increasingly frustrated with giving coal companies and regulators any benefit of the doubt. They have begun to work with Mountain Justice activists, encouraging them to seed an uprising in the coalfields, and that seems to be what is happening.

There have been questions about the new activism from some corners, to be sure, particularly for the way it can alienate politicians, regulatory officials, and hesitant or fearful mountain residents. Some mainstream activists continue to insist that SMCRA and other control laws are part of a gradual encroachment on the coal industry's control over political systems, economic development, and the natural environment, affording at least some if not completely adequate tools for protecting hills, streams, forests, and wildlife. But anyone sitting through a permit hearing these days could easily call that conclusion into question, since the procedure is so obviously designed to strictly limit discussion and thinking about surface mining, and to suggest by the end that due process has been offered and carried out. It is tempting, in fact, to think that the whole procedure is a waste of time, and might as well not happen at all. Getting a brief glimpse of the past, when environmental injustice in the coalfields was met with determined resistance and opened up a larger struggle over the balance of power, also brings that kind of clarity to our understanding of the present.

Chad Montrie is an associate professor of History at the University of Massachusetts Lowell. His most recent book is *Making a Living: Work and Environment in the United States* (University of North Carolina Press, 2008).

End Notes

1. *Courier Journal*, 9 July 1967, 28; 11 July 1967, 20; *Mountain Eagle*, 20 July 1967, 1.
2. *New York Times*, 27 August 1967, 71; Anti-poverty workers tried to clarify the situation: "Because the Appalachian Volunteers are working in Pike and other counties with citizens who are standing up in opposition to strip mining, the Eastern Kentucky strip-mine operators seem to have assumed that AVs are responsible for the opposition," the AVs explained in an August 17 press release, but "this is not the case; for us it is clear that the people of Eastern Kentucky would band together against strip mining with or without our help." *Courier Journal*, 27 September 1967, 1; A report by the Federal Bureau of Investigation noted that Ratliff's prime interest was "ridding Pike County of the antipoverty workers ... [for] reasons economic and political: (1) he has made a fortune out of the coal industry and still had coal interests; and (2) he is running for Lt. Governor in the Republican ticket and thinks it is a good issue." Paul Good, "Kentucky's Coal Beds of Sedition," *The Nation*, 4 September 1967, in *Appalachia in the Sixties*, 192.
3. Albert Whitehouse, Statement on Appalachian Volunteers Situation in Kentucky, 11 September 1967, 1, Folder 3, "Strip Mining, Sept 1, 1967 - Dec 28, 1967," Box 20, Caudill Papers; Caudill, *My Land is Dying*, 89; Calvin Trillin, "The Logical Thing, Costwise," *The New Yorker*, 27 December 1969, in *Appalachia in the Sixties*, 113.
4. *Martin vs. Kentucky Oak Mining Co.* (429 S.W. 2d 395), 395-99.
5. People Speak Out on Strip Mining (Berea, Ky.: Council of Southern Mountains, 1971), n.p.
6. People Speak; Caudill, *My Land is Dying*, 76.
7. *Mountain Eagle*, 3 June 1965, 1-2.
8. Dan Gibson quoted in *To Look Over the Land*; Hazard Herald, 15 November 1965, in Folder 4, "Strip Mining, January 10, 1965 - December 23, 1965," Box 19, Caudill Papers; Caudill, *My Land is Dying*, 80-81.
9. *New York Times*, 30 July 1967, 29; Harry Caudill, *My Land is Dying* (New York: E.P. Dutton & Co., 1973), 87; *Courier Journal*, 10 August 1967, 1; At the end of the summer of 1968, saboteurs destroyed \$750,000 worth of equipment at a Round Mountain Coal Company operation in Leslie County (see Introduction). Later, in December, someone blew up \$1,000,000 worth of equipment, including one shovel and six bulldozers, at a Blue Diamond Coal strip operation in Campbell County, Tennessee, near the state border. T.N. Bethell, "Hot Time Ahead," *Mountain Life and Work* (April 1969), in *Appalachia in the Sixties: Decade of Reawakening*, eds. David S. Walls and John B. Stephenson (Lexington: The University Press of Kentucky, 1972), 116-19.
10. *Charleston Gazette*, 7 March 1971, 1; 10 March 1971, 1; 14



- March 1971, 1; 18 March 1971, 1.
11. *Mining Congress Journal*, 57 (September 1971), 138; Senate, *Hearings Before the Subcommittee ... on S. 77, (1971-1972)*, 280-82, 329-32, 620; House, *Hearings Before the Subcommittee ... on H.R. 60, (1971)*, 296, 559, 562-63.
 12. *Courier Journal*, 21 January 1972; "We will stop the bulldozers — A Statement by the Women of Eastern Kentucky, January 20, 1972 Strip Mining," Folder, "Strip Mining," Boxes 1/2, WVRH Papers.
 13. House, *Hearings Before the Subcommittee .. H.R. 60, (1971)*, 690-91.
 14. *Sierra Club Bulletin*, 56 (May 1971), 8.
 15. Senate Committee, *Hearings Before the Committee ... on S. 425 (1973)*, 894-96.
 16. Ken Hechler to "Friends of the Coalition Against Strip Mining," 18 January 1975, Folder 8, "Strip Mining," Box 170, Hechler Papers.
 17. "Declaration of Policy" in *Mining Congress Journal*, 61 (November 1975), 89.
 18. House Subcommittee on Energy and the Environment, *Hearings Before the Subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs on H.R. 2, Surface Mining Control and Reclamation Act of 1977, 95th Cong., 1st sess., (1977)*, 37-38, 185 (Part I).
 19. *Mountain Life and Work*, 52 (October 1976), 41; United Mine Workers of America, *Proceedings of the 47th Constitutional Convention (1976)*, 273-76.
 20. *Ibid.*, 9-11; Beth Spence to Alliance Members, 28 June 1977, Folder "Strip Mining," Boxes 1 and 2, WVRH Papers; *Mountain Life and Work*, 53 (August 1977), 46; *Mountain Life and Work*, 54 (January 1978), 23.
 21. Melanie A. Zuercher, ed., *Making History: The First Ten Years of KFTC* (Prestonsburg: Kentuckians for the Commonwealth, 1991), 11-13.
 22. *Ibid.*, 298-99.
 23. J.W. and Kate Bradley returned to their home in May 1977, after a decision by a chancery court judge that included a payment of \$2700 by the company to the Bradleys, for damages to the property and denial of access to the land. *Mountain Life and Work*, 53 (August 1977), 35; Bill Allen, "Save Our Cumberland Mountains: Growth and Change Within a Grassroots Organization," in *Fighting Back in Appalachia: Traditions of Resistance and Change*, ed., Stephen L. Fisher (Philadelphia: Temple University Press, 1993), 86-87; House Subcommittee, *Hearings Before the Subcommittee ... on H.R. 2 (1977)*, 9 (Part I).
 24. Bill Allen, "Save Our Cumberland Mountains: Growth and Change Within a Grassroots Organization," in *Fighting Back in Appalachia: Traditions of Resistance and Change*, ed., Stephen L. Fisher (Philadelphia: Temple University Press, 1993), 90; SOCM Sentinel (October 1978), 3; *SOCM Sentinel* (August 1979), 1; *SOCM Sentinel* (September 1979), 2; SOCM Sentinel (October 1979), 4.
 25. The earthen dams that made the ponds were notoriously unstable, as the 1974 Buffalo Creek tragedy demonstrated years before and as the more recent Martin County spill of 250 million gallons of toxic sludge showed in 2000.
 26. *Charleston Gazette*, 3 May 1998; 9 August 1998; Maryanne Vollers, "Razing Appalachia".
 27. *Reporter* [Citizens Coal Council], Special Issue, 3 August 1997, 7, 13; At a hearing on the tenth anniversary of SMCRA, Arizona Representative Morris Udall, who had played an instrumental role in passing the law, said the act was "fundamentally sound," though hampered by a few states with weak regulatory programs, the change in regulatory philosophy when President Ronald Reagan appointed James Watt as Secretary of the Interior, and a few recalcitrant coal operators. American Mining Congress representative Ben E. Lusk called SMCRA's standards "demanding, inflexible, often counterproductive and always costly" but also described the law as "fundamentally ... sound." House Subcommittee on Energy and the Environment, Committee on Interior and Insular Affairs, Tenth Anniversary of the Surface Mining Control and Reclamation Act of 1977, 100th Cong., 1st sess., (1987), 1, 65-66.



Foiled Plans, Fouled Waters

by Sarah Lynn Cunningham, PE

Abstract

Most American cities of the Progressive Era chose to avoid the costs of building two separate sewer systems for wastewater and stormwater, and instead constructed one combined system to convey both flows to waterways, sans treatment. Following four decades of municipal water-line installation, the Commissioners of Sewerage of Louisville (Kentucky) was empowered to build sewers early in the 20th Century. Unlike most of its counterparts, Louisville responded to recurring disease epidemics by opting to install separate sewer systems to protect water quality in Beargrass Creek. However, obstacles chronically undermined the efforts of commission engineers to protect the public that swam, waded and fished there. Wildcat plumbers took advantage of weak enforcement and installed illegal cross-connections: “soil pipes” tapped into storm sewers continued to contaminate the creek, and gutters and downspouts overflowed sanitary sewers into basements and the stream. Elected officials’ unwillingness to impose fees on voters and voters’ reluctance to approve bond issues meant that funding came up far short of that required for the infrastructure that they demanded. And the city allowed, encouraged even, developers to continue building new neighborhoods, most well beyond the reach of infrastructure. As the commission fell further behind, it ultimately abandoned its health-based policy and switched to constructing only combined sewers—in retrospect a regrettable decision that will burden water quality and community coffers for decades to come, until combined sewer overflows are adequately mitigated. Still, the story of these forward-thinking engineers deserves to be told.

Introduction

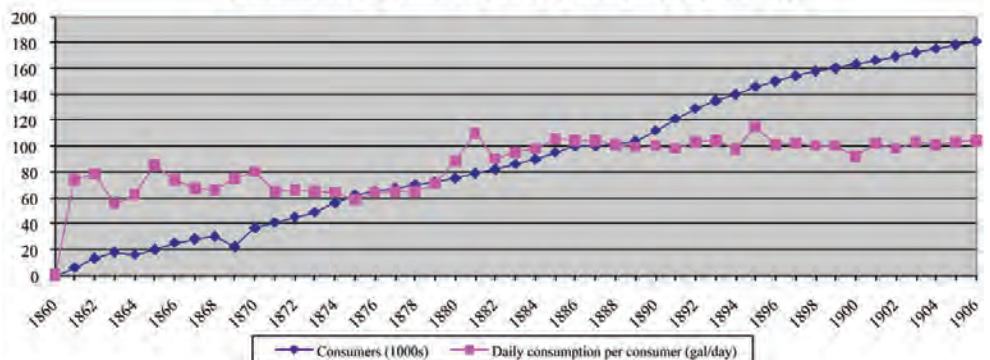
The disposal of human wastes in 19th-century urban America was haphazard, unsanitary and unpleasant. Some households merely tossed sewage onto the ground while others dumped it into cesspools (holes filled with crushed rock, also known as dry wells or seepage pits)¹, but most city dwellers relied on privy vaults—earthen pits inside cellars or backyard outhouses—that were not water tight.² Privies reeked of nauseating odors, and methane gas posed a special danger to smokers.³ The proximity of these nox-

ious privies to homes was seen as unhealthy because they “use[d] up the oxygen from the air” and “load[ed] it with pestilential gases.”⁴ They also leaked into and polluted groundwater, wells and cisterns. In his 1899 annual report, Louisville’s Health Officer wrote, “That many of public wells are contaminated by our privy vault system can not be questioned.”⁵

Privies overflowed or had to be covered over, abandoned and replaced, unless emptied at least annually. That dirty job was done by private contractors, often African Americans, called tubmen,⁶ or night men, because stirring those repugnant odors was relegated to when nearly everyone else slept. Tubmen used hand tools to excavate wet “night soil” into buckets and tubs, and then loaded them onto leaky wagons and hauled them to nearby water bodies, open land on the outskirts of town, farm acreage or fertilizer factories—leaving an infectious trail along their routes. The widespread failure of the privy vault system began with the pressures of urban crowding, and was completed by the introductions of running water and the indoor water closet or flush toilet.⁷

Municipalities constructed potable water systems to supply businesses and households, fight fires and wash down streets. Because this urban utility was infinitely more convenient and sanitary than outdoor hand-pumps, customers who could afford to pay for it eagerly tapped into its distribution lines. By 1860, municipally-supplied water flowed in 136 US cities, including Louisville; by 1880, that number had more than quadrupled to 598 communities. With access to water, per-capita consumption and installations of toilets grew exponentially. However, most flush toilets were plumbed to empty into privies or cesspools, which rapidly overflowed into cellars and backyards, and from there into alleys and streets.⁸ One leading engineer complained of the “steady growth

Consumption of Municipal Water in Louisville, KY, 1861-1906





[of] the ‘modern conveniences’ scattered throughout the house by the profuse hand of the plumber, with no regard to the effect on the atmosphere of the dwelling.”⁹

And while hundreds of cities constructed waterworks and distribution lines—that paradoxically magnified the contaminating reach of sewage—none coincidentally built sewer systems, much less wastewater treatment facilities. None of the approximately six hundred US cities operating water distribution systems in the 1880s had comparable sewer systems. Even when American cities began installing sewers, the impetus was not to improve sanitation, but to “prevent the flooding or dampness of cellars, and the obstruction of traffic by the accumulation of storm-water” after heavy storms. And cities expanded the reach of their water service pipes with little regard for any negative impacts on downstream neighbors.¹⁰

Poor sanitation coupled with Louisville’s location along the Ohio River created extensive stagnant swamplands—and mosquito breeding. Sewage commonly contaminated those sloughs, as well as the stream and well water that most residents drank. Successive deadly epidemics of cholera, yellow fever, malaria, typhoid fever and dysentery throughout the 19th century earned the town the nickname, “Graveyard of the West.” The city appointed its first health officers in 1823 and authorized its first Board of Health in 1865. Only 19 of the other 133 US cities of 30,000 or more residents surpassed Louisville’s average rate of 60 deaths per year from typhoid fever during 1898-1900—when a rate of more than 15 to 20 belied polluted water. Water-borne typhoid fever and the “Saffron Scourge” continued to plague Louisville at rates above national norms into the 20th century.¹¹

That engineers and medical doctors espoused a pair of pervasive misconceptions even after science disproved them, hampered municipal responses to these epidemics, nationally and locally. These professionals believed that dirt and miasmas—vapors and foul odors from sewage, filth and decaying matter—caused sickness.¹² The habits of foreigners and the poor—crowded into tenements with the highest concentrations of side-by-side privies and wells—were often singled out as “filthy” and blamed for spreading diseases—even in communities discharging sewage above downstream community’s water intake pipes.¹³ Sanitary engineers identified themselves as the “scientific scavenger” charged with keeping the air “pure,” by “removing all garbage, and by carrying out a proper system of drainage and sewerage.”¹⁴ And the “purifying nature” of moving water was seen as capable of cleansing all impurities that industrial era cities and factories dumped into it.¹⁵ Because mosquitoes transmitted yellow fever and malaria, these early sewers—built to drain rainwater from streets and stagnant water from low-lying ground—eradicated breeding pools and reduced those diseases’ transmission rates, albeit while also perpetuating the miasma myth.¹⁶

Design Debates

The first generation of sanitary engineers grappling with how best to manage sewage, considered two options to privies: pneumatic

ejector and water carriage systems, using vacuum pressure and water, respectively, to evacuate or flush and then transport sewage.¹⁷ Complicated, relatively unreliable and expensive, the former was soon dropped from serious consideration.¹⁸ The water-carriage system, developed mid-century in Europe,¹⁹ had drawbacks, too.

Large quantities of water were required to convey everything from household bath water and toilet flushes to slaughterhouse blood and grease to toxic industrial wastes into the nearest water body, which often “bec[a]me an elongated, open cess-pool of the worst variety.”²⁰ The more enlightened medical doctors of the day warned of spreading disease downstream, while chemists and farmers complained about the loss of fertilizer. Sewers also shifted the financial and maintenance responsibilities for sewage removal from individual property owners to municipalities.²¹

However, the demands of a public eager to flush its bodily wastes out of sight and out of mind easily drowned those concerns. Most physicians and sanitarians saw sewers as providing significant reductions in the incidence of typhoid fever and other infectious diseases. And by significantly reducing foul odors, disease and sewage overflows, industrialists and elected officials saw sewers as good for property values, as well as a city’s business climate and image, particularly in the South where the higher incidence of infectious diseases hampered growth and development. Consequently, despite few mechanisms for financing sewers—bonds, special assessments, such as one-time connection fees, and general revenues, all viewed skeptically by fee-adverse property owners—water and sewer infrastructure projects were 19th century cities’ biggest capital investments.²²

But municipalities could not install water-carriage systems without wrestling through the debate between two very different designs: A combined sewer system is a single network of large-diameter pipes designed to carry “all sewage matter, slops, rain water from roofs, roads,” etc. A separate system consists of dual networks of pipes: smaller-diameter for “all foul matters and liquids,” (also called sanitary waste), and larger-diameter for “the removal of storm-water direct to the nearest natural outlet or water course.”²³ All sewers in the U.S. were combined, until Lenox, Massachusetts, built the first separate sewer system in 1875-1876.²⁴ Until the 20th century development of wastewater treatment processes, both systems only transferred local sewage hazards to wider swaths of downstream neighborhoods or communities. These deliberations in the late-19th and early-20th centuries tended to focus on least costs.²⁵

In the late-19th century, most engineers accepted the views of sanitary engineer Rudolph Hering, whose analysis of numerous European sewer systems of various designs was published by the National Board of Health in 1882. Hering concluded that all designs were capable of improving sanitation and that municipalities could choose according to their site-based installation and maintenance costs. Though he regularly professed objectivity, his arguments showed a strong preference for combined sewers:²⁶



Separate sewers would provide no significant benefit over combined sewers as long as storms washed contamination from streets littered with horse manure and rubbish “as foul as ordinary sewage” into streams. If storm sewers were required to remove urban storm run-off, the cost of building them slightly bigger to accommodate comparatively small quantities of wastewater would be negligible. Sewers big enough for workers to enter would be easier and cheaper to maintain. Having two systems increased the risks that plumbers could mistakenly make connections “to the wrong sewer,” defeating the primary value of a separate system.²⁷

After untreated sewage undeniably overwhelmed a growing number of streams’ self-cleansing abilities, some engineers advocated that cities control disease by filtering drinking water. In his 1907 book, *Clean Water and How to Get It*, engineer Allen Hazen pointed out that, “To protect the water supply of Louisville, it would be necessary to purify the sewage of Cincinnati, Pittsburgh and hundreds of smaller cities upon the Ohio River and its tributaries.” He concluded that, “Looking at the whole matter as one great engineering problem, it is clearly and unmistakably better to purify the water supplies taken from the rivers than to purify the sewage before it is discharged into them.”²⁸

Other engineers, equally confident of the germ theory and the etiologies of water-borne diseases, argued for separate sewers. Scientists began taking samples from various locations, analyzing them for specific pollutants and plotting the results onto maps to show underground movement of polluted water from privy vaults and cesspools to water wells. Health agencies began collecting data on the causes of death; early epidemiological studies demonstrated connections between contaminated wells and typhoid and cholera. Later analyses showed incremental declines in water-borne diseases after the installation of municipal drinking water and, later, sewers. These engineers also saw combined sewers as too big to keep sewage moving during dry periods, yet too small to handle the heaviest storms. Lastly, they considered odor control an insurmountable challenge in cavernous combined sewers.²⁹

Perhaps the best known sanitarian in that critical time was Colonel George E. Waring, Jr., who was not an engineer, but an agriculturalist with engineering work experience. From his work for Frederick Law Olmsted—the charismatic pioneer of American landscape architecture who convinced city leaders to set aside prime real estate for public parks—Waring learned to parlay his personality to persuade others to his way of thinking. His articles employed flamboyant language, and were published in popular magazines, such as *Atlantic Monthly*, as well as trade journals. After constructing the separate sewers in Lenox, he submitted a \$200,000 bid to build a similar system in Memphis, Tennessee, after an especially deadly epidemic of yellow fever. With only \$368,702 raised through a special tax to spend, the city chose Waring’s proposal over the \$1,000,000 bid from a pair of engineers, one of whom was Charles Hermany of Louisville. Waring used the drop in Memphis’ yellow fever rates following construction of the sewers to widely promote his design. However, his atypical design—under-sized pipes and substitution of lamp holes for man

holes—only added to the controversy within the engineering profession.³⁰

Waring’s lack of formal training only added to many engineers’ reluctance to take the risks that they associated with selling separate sewer designs to their municipal clients. Leonard Metcalf and Harrison Eddy, leading sanitary engineers of the early-20th century, wrote the influential three-volume design manual, *American Sewerage Practice*—updated editions of which are still used by engineers today. In their first chapter, entitled, “The Lessons Taught by Early Sewerage Works,” (Volume I—*Design of Sewers*, published in 1914), they bemoaned the fact that, “American sewerage practice is noteworthy among the branches of engineering for the preponderating influence of experience rather than experiment upon [its] development . . .”³¹

Through the first decade of the 20th century, the type of sewer system selected by municipalities strongly correlated with the city’s size: smaller cities typically installed separate sewers, supplemented with surface drainage piping. However, greater concentrations of impervious surface—and thus stormwater runoff—led cities of more than 100,000 residents to build combined sewers by a seven-to-one margin. Because health officials in most states failed to persuade municipal decision-makers to see combined sewers as universal threats to public health until the 1920s and 1930s, most US cities ended up with some of both types of sewers, i.e., combined in older areas and separate in more recently sewered areas.³²

But as cities expanded, so did the sanitary design challenges. Increasing concentrations of rooftops, paved streets, sidewalks and, eventually, parking lots necessitated more drainage, as more streets flooded. Worse, runoff-filled sewers increasingly back-flowed into basements—creating significant health risks, political liabilities and costly damage claims, prompting cities to construct two new types of sewers: “Relief sewers” ran alongside older sewers to convey excess wet-weather flow. Inside periodic junction boxes, semi-partitions between the original and relief sewers kept smaller, dry-weather flows in the original sewer, yet allowed voluminous, wet-weather flows to leap over the partition into the relief sewer. To further reduce the risks of back-ups, these sewers had “regulators,” overflow outlets now called combined sewer overflows (CSOs), allowing excess stormwater and sewage to flow into the nearest water body. “Interceptor sewers” redirected flows in stream-bound sewers, initially away from smaller and into larger streams and, later, away from streams and into treatment facilities. However, regulators emptied excess interceptor flow into receiving streams, rather than basements.³³

While the installation of sewers reduced the local incidence of certain diseases, the public health benefits of sewerization were not reaped universally. Business districts and more affluent areas of town often off-loaded their sewage to lower-lying, less affluent areas. Similarly, upstream cities shifted their sewage to downstream cities. Besides damaging downstream drinking water supplies, sewers also commonly damaged the industrial utility and recreational value of receiving waters.³⁴



Looking back on these debates, historians have seen those advocating separate systems as having the strongest argument from the perspective of public health. Yet most cities opted for combined systems, an option that historians have tended to argue was based on least costs. A study of Louisville’s history of sewer construction complicates this story.

The Louisville Story

Louisville generally followed this pattern. Like the rest of the nation, it first built sewers, not to remove disease risks from residential areas, but to drain stormwater from its business district,³⁵ as well as ponds that served as garbage dumps, attracted pigs and bred the mosquitoes that carried malaria and typhoid fever.³⁶

The city’s earliest attempts to provide municipal drinking water in the 1830s failed due to consumer resistance. Before germs became commonly understood, Louisvillians tended to assume that their well water was potable as long as it was palatable and looked reasonably clean after the mud settled. Only after several fires in the business district and a promise to leave free corner wells in place, did the Kentucky legislature authorize the Louisville Water Company’s creation in 1854. When city water first flowed in 1860, the initial customers were chiefly businesses, including such large consumers as public baths, hospitals, restaurants and a paper mill. Far into the 20th century, most residents preferred the free water from their wells to paying for city water,³⁷ even though fewer than two miles of storm sewers existed that year.³⁸

In 1867, the city began constructing sewers to empty into Beargrass Creek, as well as the Ohio river.³⁹ Beginning in the 1870s, a series of city engineers constructed several large trunk sewers, including the four-mile-long Western Outfall. By 1880, only 37 miles of sewers (30 miles per 100,000 residents) served 60% of Louisville’s quadrupled population of nearly 124,000 residents then liberally consuming city water.⁴⁰ In 1883, the local Commercial Club hired Rudolph Hering to do a sanitary survey; he observed that citizens living along Beargrass Creek suffered more than their share of typhoid fever.⁴¹ By 1900, 100 miles of sewers (49 miles per 100,000 residents) served the still ballooning population of almost 205,000 residents.⁴² With more residents consuming city

water and flushing to sewers, the local typhoid death rate began a slow decline. The graph shows the inverse relationship between sewer installations and typhoid deaths.⁴³

In his 1898 annual report, Louisville’s Health Officer, M. K. Allen, said of Beargrass Creek, “the filth poured into it by sewers and from other sources . . . causes a polluted atmosphere, laden with disease germs. This stream should be covered over and made into a sewer.” He predicted that, “When a perfect system of sewerage is completed we may expect greater immunity from disease of a malarial type,” and urged that the construction of sewers be “pushed forward more vigorously, as our city needs very many more.”⁴⁴ But due to “lack of funds,” the City of Louisville all but ceased to extend sewers after 1899—despite continued waves of immigrants and construction of street-car suburbs beyond the sewershed. Sewage flowed in curbside gutters, as typhoid death rates hovered in the mid-50s per 100,000 residents and spiked to 73 per 100,000 in 1903.⁴⁵ More pavement generated more run-off and basement and street flooding; contesting damage suits and paying judgments became costly.⁴⁶

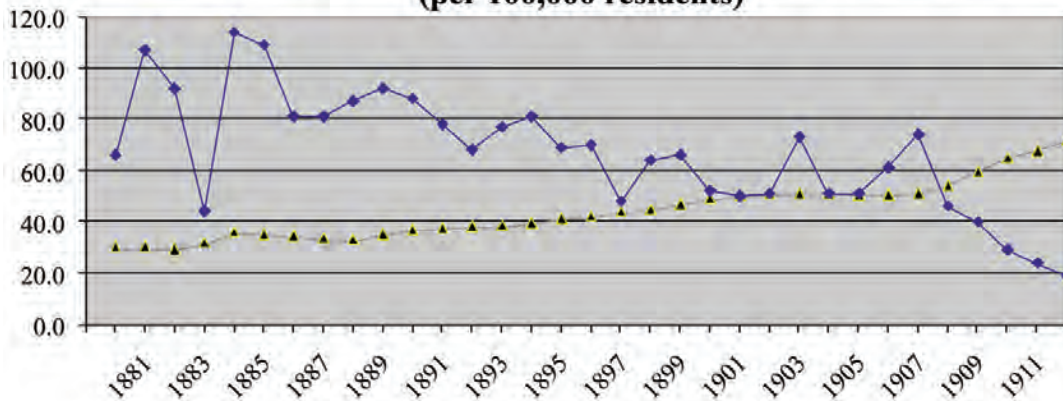
After voters rejected bond issues to pay for extending sewers in 1902 and 1904, Mayor Paul C. Barth and other leaders persuaded the Kentucky General Assembly to adopt an act in March, 1906 that enabled the appointment of the Commissioners of Sewerage of Louisville, and a \$4,000,000 bond proposal to go before the voters that November. In the interim, the promptly appointed commission hired consulting engineers Samuel M. Gray of Providence, Rhode Island, and Harrison P. Eddy of Worcester, Massachusetts, to assist its chief engineer, Joshua B. F. Breed. With the assistance of a survey team furloughed by the federal government, these engineers and their staffs immediately began planning sewer projects and presented their recommendations to the mayor and General Council by October—before voters went to the polls the following month. Local newspapers promoted the proposal and, this time, voters approved the bond issue by a better than two-to-one margin.⁴⁷

Aware of the challenges of funding Louisville’s immense infrastructure needs, the engineers reasoned that the flow in the Ohio River was so large and rapid that the city could indefinitely forego

building a “purification” facility, and could instead concentrate its resources on installing sewers. Still, they warned of the inevitability that the federal government would someday ban the discharge of wastewater into navigable waterways, and proposed to design all new sewers to flow to one outfall on the Ohio River, to facilitate later interception and diversion to a treatment plant.⁴⁸

The report offered three options for sewer design, but recommended the one that

Relationship Between Sewerization and Typhoid Death Rates (per 100,000 residents)





would, first, protect health by diverting sewage from Beargrass Creek toward the Ohio River and then solve as many other sewer and drainage problems as possible with the remaining funds. Given the expense of rebuilding hundred-plus miles of existing combined sewers, the commission decided to continue using them and to construct any new sewers draining into them as combined sewers as well. Similarly, lest the cost of dual systems to serve the neighborhoods furthest from the Ohio river consumed too much funding, it proposed combined sewers for those areas too. But the commission proposed separate sewers for the Beargrass Creek sewershed above Cherokee Park—where the public frequently swam—and for areas near the river, with prevalent bedrock or slope to allow smaller diameter sewers.⁴⁹

Major projects for the city's south, west and east sides headed the list of proposed infrastructure. The especially flat South End lacked sewers and suffered from chronic flooding. Fearing ruinous groundwater infiltration into a separate sewer deep in chronically soggy terrain, the commission proposed a combined trunk sewer, dubbed the Southern Outfall. Because Shawnee Park and other amusement parks along the river on the city's west side were "quite a favorite resort for health and pleasure . . . during the summer months," the commission proposed to then redirect the flow discharging from the existing combined Northwestern Outfall to the downstream Southern Outfall to eliminate "objectionable conditions in the vicinity of [those] parks." Though it characterized Beargrass Creek as "an open sewer [and] in many places, a succession of foul, stagnant ponds," it rejected calls for covering and turning it into a sewer. To protect public health, it instead proposed interceptor sewers along both banks, to divert the flow in existing sewers to the Ohio River. Lastly, it specified separate sewers to serve the Letterle Avenue, Brownsboro Road, Mellwood Avenue, Cherokee Park and Crescent Hill areas, all draining to Beargrass Creek, near the Ohio River because it was generally hilly and full of bedrock.⁵⁰

Though the Mayor and General Council approved the commission's plan, court challenges and nationwide financial instabilities delayed the commencement of construction until January, 1908, when the commission took on a furious pace, letting 59 contracts in two years.⁵¹ But from its start, demands for better drainage delayed the agency's plans. Another major project began the conversion of the Middle Fork of Beargrass Creek from a shallow, meandering stream into a deep, concrete-lined engineered channel with vertical walls, aiming to stop growing volumes of contaminated runoff from flooding adjacent homes, businesses and railroad tracks.⁵²

The nascent commission's 1910 report showed that daunting challenges pushed it further behind: increasing water use overloaded older sewers not designed for such volumes. Besides continued population growth, municipal annexations added new neighborhoods to the service area. Its budget barely paid for a few trunk and interceptor sewers—and no lateral or collector sewers into neighborhoods—yet the city continued to build new streets with neither storm nor sanitary sewers, imposing significantly slower and more expensive retroactive work on the commission. And as the



The South Fork of Beargrass was originally a meandering stream, here running through Germantown with St. Therese Catholic Church in the background.



The South Fork of Beargrass Creek frequently overflowed its banks, fully submerging the main Louisville & Nashville rail line. This view is looking north from Breckinridge Street.



Trying to control flooding, the South Fork of Beargrass Creek was converted into an engineered channel, with a dry-weather channel running down its center.



Allowing homes to be built ahead of sewers meant retrofitting, greater costs, longer schedules and nuisances for residents. This project was at Southern Parkway and Wellington Avenue in 1929.

paved portion of the service area continued to expand and flooding worsened, the commission issued the following caution regarding its separate sewers:⁵³

Untiring care will always be necessary to insure the discharge of the sewage from the buildings into the sanitary sewers and also to prevent any storm water from entering them. None of the sanitary sewers are large enough to accommodate storm water even from very small areas, and should storm water be allowed to enter them, flooding of the houses will occur. On the other hand, the entrance of sewage into the storm drains might cause a great nuisance in the open creeks into which they will ultimately discharge.

Pointing out that “fecal matter was visible along the shore . . . on the Kentucky side,” a 1911 water-quality report proclaimed the Ohio River “decidedly repulsive” where Louisville’s sewers discharged into it. The mouth of Beargrass Creek “seemed to be boiling, due to septic action,” with its water “thick with black suspended matter” and its “stench . . . almost unbearable.”⁵⁴ Voters nonetheless rejected a proposed \$2 million bond issue in 1912, forcing the otherwise broke commission out of business in 1913, after laying 54 miles of sewers.⁵⁵ In a report on its accomplishments, the commission measured its success against the benchmark of typhoid death rates. While acknowledging reductions due to the August, 1909, start-up of the water company’s filtration system—twenty months after sewer construction began—its analysis showed a strong correlation between increased sewers in the ground and reduced typhoid deaths. As evidence, it cited a Health Department analysis of all 138 local typhoid cases during the 1910-1911 fiscal year, fatal or not, and the victims’ water sources and sewage disposal methods: 79% got sick despite drinking filtered city water, while 73% still relied on open privy vaults.⁵⁶



Packing houses routinely dumped offal into Beargrass Creek where it ran through Butchertown. High water after a snow melt partially collapsed a bridge constructed to allow dumping on both sides of the stream."

The city sold its Louisville Gas & Electric Company and used the \$1,387,500 in proceeds to allow its Board of Public Works to continue sewer construction and Beargrass Creek channelization. That money ran out in 1915, essentially ending sewer construction until 1919, when voters approved a \$2 million bond issue—after civic and business groups endorsed it, local newspapers published maps showing streets still relied on privies and advocated air-dropped promotional literature. The second appointed Commissioners of Sewerage resumed sewer construction at a feverish pace through the 1920s and 1930s, also with the proceeds of two more general obligation bonds, for \$5 million in 1924 and \$10 million in 1928.⁵⁷



In 1926, Mayor A. A. Mill, Chief Engineer Joshua B. F. Breed and other Commissioners of Sewerage officials pose in the newly completed sewer under 8th Street and Broadway.



Proliferating duties cancelled the reincarnated commission's successes. By 1921, the city had 285 miles of sewers, but nearly all were hydraulically overloaded during wet weather, and many areas were still unsewered. The City Health Officer calculated that typhoid had cost Louisvillians nearly \$14 million over the previous eighteen years. Population, annexed service area and impervious surfaces continued to expand, while funding did not. Flooded streets delayed streetcars and other traffic. Interceptor sewers extended along Beargrass Creek, but no further than Cherokee Park, as upstream development marched on. The separate sewers proved under-sized; designed strictly for residential sewage, they lacked adequate margin for larger generators such as schools and laundries, for groundwater infiltration through bad joints and for downspouts and gutters tapped in "accidentally or surreptitiously." And lest the mix back into basements, regulators combined sewer overflows to allow excess flow to escape to Beargrass Creek and the Ohio River, which became routine features of interceptor and relief sewers.⁵⁸ In 1923, the City Health Officer declared the creek to be "an open sewer" and threatened to use dye to identify the responsible homeowners if necessary to protect children playing in Cherokee Park, after his inspectors waded along it to confirm the presence of buried "straight shot" soil pipes.⁵⁹

In 1924, 46% of the city still lacked sewers.⁶⁰ The commission's 1929 report showed that—despite letting twenty construction contracts costing \$5 million in the previous four years, expanding the system to 396 miles—competing demands continued to far outpace its best efforts to protect public health. Cross connections abounded, prompting a call for systematic inspection and correction. Homeowners and especially landlords often ignored an ordinance requiring them to abandon privies and connect to sewers as soon as they became available. At least ten regulators overflowed into Beargrass Creek. Admitting a lack of current data on the impact of Louisville's sewage on the Ohio River, it proposed periodic water-quality monitoring. Full-page photos showed flooding in the South End, including boys in bowery caps standing in thigh-high water in front of their new homes. Declaring its tasks "obviously impossible" with only a \$10 million bond issue to spend, the commission made its priority combined trunk sewers where none yet existed.⁶¹



A branch of Mill Creek flooded Manituva Avenue, newly constructed without drainage infrastructure, in 1929.

The Joint Sanitary Survey and Research Committee, a collaboration between health officials and the plumbing industry, organized itself in 1936 after federal health officials declared that Louisville's inordinately high concentration of twelve thousand privies threatened renewed epidemics. While health inspectors conducted door-to-door inspections—and ordered cross-connections corrected, septic tank overflow pipes capped and, where sewers existed, privies surrendered—the trade group promoted the training and licensure of master plumbers. The health board quickly halved the privy tally, mainly by ordering sewer connections.⁶² Still, the community's failure to dedicate adequate resources for sanitary sewers frustrated the Department of Public Health as well. In its 1936-1937 annual report, this body of medical doctors, nurses and sanitarians responded in strikingly blunt terms:⁶³

In some parts of the city septic tank drainage and partially treated sewage is flowing openly in the street gutters, and is . . . creating a sanitary nuisance and a health problem of a major character. For this reason outdoor privies if they were of a sanitary design would in most cases be preferred to the septic tank . . . The only correct and permanent solution for these conditions is the construction of sanitary sewers . . . It is questionable if this improvement will be brought about for many years to come because of the extensive expenditures necessary . . . and particularly so because of the large amounts of money required to construct the combined system of sewers.



In 1940, the federal Works Progress Administration paid day laborers to dig the trench in which the Beals Branch sewer would be constructed.

When its money ran out shortly after the nation entered World War Two, this commission, too, went out of business. Its 1942 final report was 894 pages of accomplishments, financial accounting, design manual, operations handbook, preliminary plans for future projects and raising revenues—and lamentations: Louisville's 550 miles of sewers were "built piecemeal and inconformity to the immediate needs and the funds available, rather than [on] comprehensive long-range planning." Neither a treatment facility nor a unified outfall had been built. The locks and hydroelectric dam com-



pleted across the river in 1927 created an elevated upper pool, as well as hydraulic and sanitary problems in the sewers discharging into it; the mouth of Beargrass Creek stagnated and became “exceedingly obnoxious and unsanitary.” The 1937 flood did further damage. Wet-weather overflows, malfunctioning regulators, brewery slops, stockyard wash-downs, industrial waste and “straight-shot” pipes, kept Beargrass Creek unfit for swimming, and improper connections killed the commitment to separate sewers:⁶⁴

In general, the Commission’s policy has been to construct combined sewers rather than separate systems. The principle reason for this is the difficulty of preventing misuse of the separate system. Experience in Louisville shows that it is impossible for the city officials . . . to prevent the connection of some house sewers to the storm drains and connections of some house drains to the separate sewers. This results (1) in the discharge of dry-weather sewage into the storm drains and thence into the streams, thereby polluting the streams, and (2) in the discharge of stormwater into the separate sewers and thence into the intercepting sewers, thereby surcharging these sewers. These evils are so objectionable that, in the opinion of the Commission’s engineers, use of the separate system in Louisville should be avoided whenever practicable, in designing sewerage works.

Conclusion

Public officials do not always take the easiest or cheapest route. Despite embracing inaccurate notions about the ability of the Ohio River to safely absorb sewage pollution, the first Commissioners of the Sewerage of Louisville were relatively progressive and more conscious of public-health issues than their peers in most American cities. A mere six years into the 20th century, they polled experts and concluded that enough consensus existed to justify a policy of building separate sewers wherever feasible, plus some eventual form of wastewater treatment prior to discharge into the Ohio River. Yet funding foundered, forcing the commission to divide its attention between retrofitting sanitary and storm sewers into inhabited areas, improving drainage and constructing sewers in new street-car suburbs under construction. Worse, the misdeeds and mistakes of plumbers thwarted commission engineers’ good intentions, forcing them to abandon separate sewers for more expensive combined sewers, further slowing the extension of service and adding to stream pollution. Like any public policy, it is only as effective as its implementation and enforceability. Without taxpayer support for adequate funding as well as transparent mechanisms to ensure good design, proper construction and meaningful regulatory enforcement, including protection of whistle blowers, even the best public policy can in the end come up short.

Acknowledgements

The following individuals were of critical assistance to the development of this paper: John T. Cumbler, History Department,

University of Louisville; Liz Edmondson, Kentucky Resources Council; Tom Fitzgerald, Kentucky Resources Council, Angela Griffin, Metro Archives, Kevin B. McAdams and Tom Owen, University of Louisville Archives.

Sarah Lynn Cunningham is a licensed environmental engineer and certified environmental educator. She holds two interdisciplinary degrees; a bachelor’s in environmental engineering and a master’s in environmental education and environment history, both from the University of Louisville. She is self-employed, after having retired from civil service with the Louisville and Jefferson County Metropolitan Sewer District, Jefferson County Board of Health and Kentucky Division of Water. Sarah Lynn has been an active environmentalist since high school.

End Notes

- 1 Cady Stanton and George S. Pierson, *The Separate System of Sewerage, Its Theory and Construction*, 3rd ed. (New York: Van Nostrand Co., 1899), 19.
- 2 Ronald S. Barlow, *The Vanishing American Outhouse: A History of Country Plumbing* (El Cajon, CA: Windmill Publishing Co, 1992), 7.
- 3 *Ibid.*, 5.
- 4 Stanton and Pierson, *Separate System of Sewerage*, 18.
- 5 City of Louisville, Dept. of Finance, “City of Louisville Annual Reports for the Fiscal Year Ending August 31, 1899 and December 31, 1899,” (1900), 286, Louisville Free Public Library.
- 6 Ted Steinberg, *Down to Earth: Nature’s Role in American History* (New York: Oxford Univ. Press, 2002), 164.
- 7 Joel A. Tarr, James McCurley and Terry F. Yosie, “The Development and Impact of Urban Wastewater Technology: Changing Concepts of Water Quality Control, 1850-1930,” from *Pollution and Reform in American Cities, 1870-1930*, ed. Martin V. Melosi (Austin: Univ. of Texas Press, 1980), 60-61; Barlow, *Vanishing American Outhouse*, 6.
- 8 Tarr, McCurley and Yosie, *Pollution and Reform*, 61-63; Stanton and Pierson, *Separate System of Sewerage*, 38; and Joel A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron: Univ. of Akron Press, 1996), 131-133.
- 9 George E. Waring, Jr., “Sanitary Drainage,” *The North America Review*, 137, no. 320 (July 1883), 60.
- 10 Tarr, McCurley and Yosie, *Pollution and Reform*, 62-63; Anthony N. Penna, *Nature’s Bounty: Historical and Modern Environmental Perspectives* (New York: M.E. Sharpe, 1999),



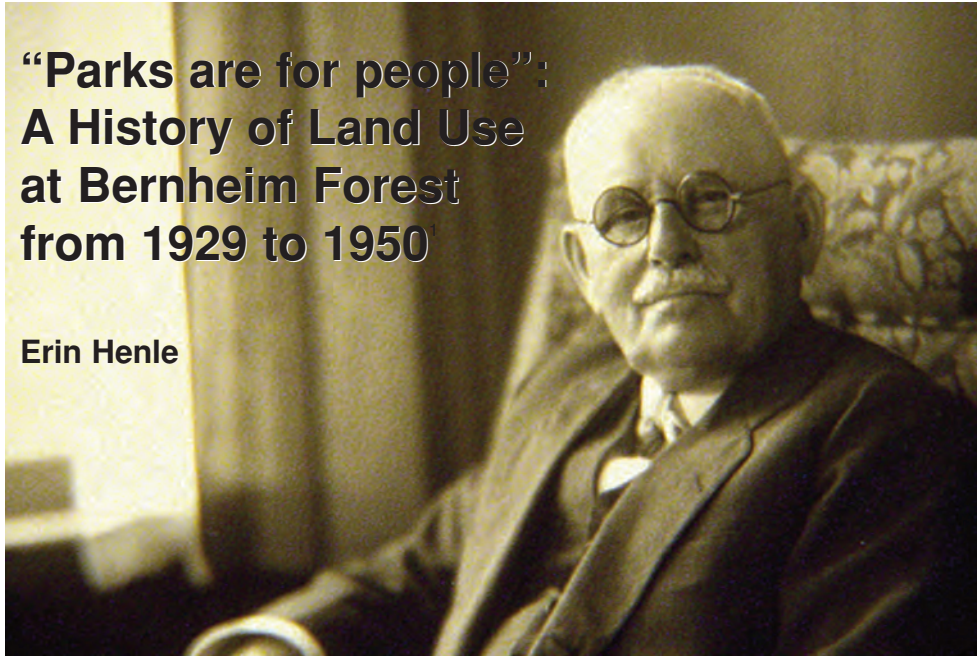
- 181; and Waring, "Sanitary Drainage," 57-58.
- 11 Baird, Nancy Disher. "Epidemics," in *The Encyclopedia of Louisville* (Lexington: Univ. Press of Kentucky, 2001), 271-274; Baird, Nancy Disher. "Sanitation," in *The Encyclopedia of Louisville* (Lexington: Univ. Press of Kentucky, 2001), 786-787; George W. Fuller, "Typhoid Fever Death Rates in American Cities," in *Public Health: Papers and Reports of the Twenty-Ninth Annual Meeting of the American Public Health Association*, Buffalo, New York, Volume XXVII, September, 1901 (Columbus, OH: Berlin Press, 1902), 100-102; and Carolyn Merchant, *The Columbia Guide to American Environmental History*, (New York: Columbia Univ. Press, 2002), 113.
- 12 John T. Cumbler, *Northeast and Midwest United States: An Environmental History* (Santa Barbara, Ca.: ABC-CLIO, 2005), 232.
- 13 "Sanitation, True Economy—Protects Life, Health, Property," (Louisville) *Herald-Post*, June 30, 1936; J. N. Hays, *Epidemics and Pandemics: Their Impacts on Human History* (Santa Barbara, Ca.: ABC-CLIO, 2005) 249-253, 257, 262-263; 367-368; Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, D.C.: Island Press, 1993), 51-55; and Cumbler, *Northeast and Midwest*, 155.
- 14 Stanton and Pierson, *Separate System of Sewerage*, 17.
- 15 Penna, *Nature's Bounty*, 182.
- 16 Molly Caldwell Crosby, *The American Plague: The untold story of yellow fever, the epidemic that shaped our history* (New York: Berkeley Publishing, 2006), 89; and John R. Pierce and Jim Writer, *Yellow Jack: How Yellow Fever Ravaged America and Walter Reed Discovered Its Deadly Secrets* (Hoboken, NJ: Wiley and Sons, 2005) 21-22.
- 17 J.T. Brown and W.H. Maxwell, eds., "Sewerage," *The Encyclopedia of Municipal and Sanitary Engineering* (New York: Van Nostrand Co., 1910), 421.
- 18 Stanton and Pierson, *Separate System of Sewerage*, 35-37; and Tarr, McCurley and Yosie, *Pollution and Reform*, 63.
- 19 Rudolph Hering, "Report of the Results of an Examination Made in 1880 of Several Sewerage Works in Europe," (App. A), *Annual Report of the National Board of Health* (Washington: GPO, 1882), 103-104; and George E. Waring, "Sanitary Drainage," 57-58. The first water-carriage system was built in London, England. One of the two leading parameters for measuring water quality still in use in the U.S. is the five-day biochemical oxygen demand (BOD5), also from England. It measures how much oxygen is consumed by decomposing water-borne pollution over five days—whether conducted in England or the significantly larger U.S.—because a pollutant discharged in the most inland English stream reaches the sea in five days. Its oxygen demand was assumed to then be irrelevant.
- 20 Stanton and Pierson, *Separate System of Sewerage*, 20.
- 21 Tarr, McCurley and Yosie, *Pollution and Reform*, 60-68.
- 22 Ibid.
- 23 Brown and Maxwell, *Encyclopedia of Municipal and Sanitary Engineering*, 421.
- 24 Tarr, *Search for the Ultimate Sink*, 136-139.
- 25 Tarr, McCurley and Yosie, *Pollution and Reform*, 59.
- 26 Hering, *Annual Report*, 103-116.
- 27 Ibid.
- 28 Allen Hazen, *Clean Water and How to Get It* (New York: John Wiley and Sons, 1907), 35-36, 72-81 and 200.
- 29 Stanton and Pierson, *Separate System of Sewerage*, 20-34 and 40-41.
- 30 Tarr, *Search for the Ultimate Sink*, 138-140; Leonard Metcalf and Harrison P. Eddy, *American Sewerage Practice, Volume I—Design of Sewers*, (New York: McGraw-Hill, 1914), 24-25.
- 31 Metcalf and Eddy, *American Sewerage Practice*, 1; George Tchobanoglous, Franklin L. Burton (ed.) and H. David Stensel, *Wastewater Engineering: Treatment and Reuse*, 4th Ed. (New York: McGraw-Hill, 2002); and Tarr, *Search for the Ultimate Sink*, 152-155.
- 32 Tarr, *Search for the Ultimate Sink*, 152-155.
- 33 Tarr, *Search for the Ultimate Sink*, 146-148 and 153-155; and Metcalf and Eddy, *American Sewerage Practice*, 46. The US Environmental Protection Agency (EPA) estimates that CSOs and combined sewer systems are still a major source of water pollution in 772 American cities—serving approximately 40 million residents—mainly in the Northeast, Great Lakes region and Pacific Northwest. In 1989, the EPA developed the so-called "CSO Strategy" through negotiations with various interested parties, under the guise of the federal Clean Water Act. The strategy called for the adoption of the "nine minimum controls" and the development of city-specific control plans for ameliorating, if not eliminating CSOs. States then wrote these requirements into discharge permits, effectively mandating the CSO Strategy. See Combined Sewer Overflow Demographics, http://cfpub.epa.gov/npdes/cso/demo.cfm?program_id=5, accessed on Sept. 13, 2008. Like sewers, CSOs come in a wide range of designs, often custom designed for site-specific situations, making their mitigation especially challenging, slow and expensive.
- 34 Baird, *Encyclopedia of Louisville*, 271-274; and Tarr, McCurley and Yosie, *Pollution and Reform*, 59.
- 35 Report of Commissioners of Sewerage of Louisville: Work Done Upon the Comprehensive System of Sewers to January 1, 1910 (Louisville: Commissioners of Sewerage of Louisville, Kentucky, 1910), 19-20.
- 36 Baird, *Encyclopedia of Louisville*, 271-274.



- 37 Yater, George H. "Louisville Water Company," in *The Encyclopedia of Louisville* (Lexington: Univ. Press of Kentucky, 2001), 576-577.
- 38 Martin E. Biemer, *Fifty Years of Service*, ed. H. J. Schardein, Jr. (Louisville: Louisville and Jefferson County Metropolitan Sewer District, 1998), 5-6; and "Louisville Water Company Annual Report," (1862), 46, Louisville Free Public Library.
- 39 Report of the Commissioners of Sewerage of Louisville to Honorable George Weissinger Smith, Mayor, Upon a Comprehensive System of Sewers (Louisville: Commissioners of Sewerage of Louisville, Kentucky, 1921), 7.
- 40 Final Report of the Commissioners of Sewerage of Louisville: Work Done Upon the Comprehensive System of Sewers From February 26, 1906, to March 31, 1913, (Louisville: Commissioners of Sewerage of Louisville, 1913), 66.
- 41 *Ibid.*, 65.
- 42 *Ibid.*, 66.
- 43 *Ibid.*, 64-68; and "Louisville Water Company, Report for Year Ending December 31st, 1906," (1907), 242-245, Louisville Free Public Library.
- 44 City of Louisville, Dept. of Finance, "City of Louisville Annual Reports for the Fiscal Year Ending August 31, 1898 and December 31, 1898," (1899), 284-285 and 310-311, Louisville Free Public Library.
- 45 "Louisville Water Company, 1907, 242-245.
- 46 Report of Commissioners of Sewerage, 1910, 20-21.
- 47 An Act to enable cities of the first class to construct a comprehensive system for the disposition of sewerage. (March, 14, 1906), *Laws of Kentucky*, 1-9; Report of Commissioners of Sewerage, 1910, 5-12.
- 48 Report of Commissioners of Sewerage, 1910, 53-54.
- 49 Report of Commissioners of Sewerage of Louisville, Kentucky, to the Honorable Mayor and Members of the General Council, October 8, 1906 (Louisville: Commissioners of Sewerage of Louisville, Kentucky, 1906), 33-34.
- 50 Report of Commissioners of Sewerage, 1906, 18-19, 22-25, 30-35 and 44-45.
- 51 Report of Commissioners of Sewerage, 1910, 5-9.
- 52 J. B. F. Breed and Harrison P. Eddy, Special Report to the Commissioners of Sewerage of Louisville upon the Improvement to Beargrass Creek, (Louisville: Commissioners of Sewerage of Louisville, 1909), 3-6, 16 and 55-74.
- 53 Report of Commissioners of Sewerage, 1910, 12-13, 69 and 73-79.
- 54 "Stream Pollution Looms as Public Menace: Experts Declare that Disposal of Sewage by River Cities Is Problem before State and Nation," (Louisville) *Courier-Journal*, Jan. 6, 1913
- 55 "Commissioners of Sewerage," *The Encyclopedia of Louisville* (Lexington: Univ. Press of Kentucky, 2001), 213.
- 56 Final Report of the Commissioners of Sewerage, 1913, 64-68.
- 57 Biemer, *Fifty Years of Service*, 6-7; "'Sewer Map' Will Tell the City a Startling Story" *Louisville Post*, Oct. 9, 1919; *Encyclopedia of Louisville*, 213; "Optimists Put O.K. on City Sewer Bond Issue," (Louisville) *Courier-Journal*, Sept. 24, 1919; "Rotary Club Votes Favoring Sewer Bond," (Louisville) *Courier-Journal*, Sept. 26, 1919; "Shawnee Welfare Club Indorses Sewer Bond Issue," (Louisville) *Courier-Journal*, Oct. 10, 1919; and "Board of Trade Indorses Sewer Bond Issue," (Louisville) *Courier-Journal*, Oct. 23, 1919.
- 58 Report of the Commissioners of Sewerage, 1921, 4-11, 18, 22-24, 50-59 and 89-94; and "In Eighteen Years Typhoid Fever Has Cost Louisville \$13, 850,000 Against \$9,105,000 Spent for Sewers," (Louisville) *Civic Journal*, May 7, 1921.
- 59 "Park Creek Is Called, 'Sewer'," (Louisville) *Courier-Journal*, July 18, 1923; and "Would Run Down Pollution Source," *Louisville Times*, Sept. 5, 1923.
- 60 "Sewer Needs in City Emphasized," (Louisville) *Courier-Journal*, Oct. 20, 1924.
- 61 Report of the Commissioners of Sewerage of Louisville to Honorable William B. Harrison, Mayor, Upon a Comprehensive System of Sewers (Louisville: Commissioners of Sewerage of Louisville, Kentucky, 1929), 4-9, 19, 21 and 24-49; and "Sanitation, True Economy," *Herald-Post*, June 30, 1936.
- 62 "Sanitation Progress of 1935 Reviewed," (Louisville) *Courier-Journal*, Jan. 1, 1936; "Vaults Threaten to Spread Disease Again Throughout City," (Louisville) *Herald-Post*, June 23, 1936; and "City Wars on Poor Plumbing," (Louisville) *Courier-Journal*, July 19, 1936.
- 63 1936-7 Annual Report (Louisville: Louisville Department of Public Health, 1937), 54-55.
- 64 Woolsley M. Caye and C. Frank Johnson, Report of the Chief Engineer to the Commissioners of Sewerage of Louisville (Louisville: Commissioners of Sewerage of Louisville, Kentucky, 1942), 3, 38, 43, 48-50, 82-83., 93-94, 105, 268-270, 407, 421-424.

“Parks are for people”: A History of Land Use at Bernheim Forest from 1929 to 1950

Erin Henle



Isaac W. Bernheim, a prominent Kentucky capitalist and philanthropist took the first step toward creating his legacy in April of 1928 when he purchased thirteen thousand acres of “wild Kentucky Knob land.”² With this land he hoped to create a place of protected nature while preserving the region’s heritage of hardwood forest. The incorporation of the I.W. Bernheim Foundation in 1929 set up a self-perpetuating board of directors, mostly of Louisville businessmen who, by their own admission, had little expertise in a land management project of this kind.³ The Board was charged with managing the Estate in accordance with their founder’s wish to provide a place where Kentuckians “could further their love of the beautiful in nature.”⁴ From the very beginning, board members interpreted the founder’s wish differently and often strayed far afield. Seventy-seven years later the Bernheim Foundation continues to struggle with balancing the founder’s recreation-oriented wishes with a modern, more ecologically based conservation ethic.⁵ The Foundation’s first two decades were formative years and took place during the New Deal era, a watershed in conservation history.

U.S. historians point to the controversy over creating Yosemite’s Hetch Hetchy dam in 1901 as a defining event in the conservation movement. It ignited a twelve-year fight between those who wanted to preserve the natural environment and those who wanted to convert the Hetch Hetchy Valley into a reservoir to provide water for public use. Preservationists were interested in maintaining the aesthetics of untouched wilderness for its own sake, while conservationists wanted to manage nature for its utilitarian benefits. During the New Deal era, the federal government became heavily involved in the growth of outdoor recreation, signifying a shift in priorities away from Progressive Era resource conservation.⁶ The Bernheim Estate was established during a period of rapid expansion of state and national parks and forests. Just a little over a decade before I.W. Bernheim purchased his property in Kentucky, the National Park Service was formed, the first wilderness area was set aside and prominent utilitarian foresters began denouncing the Forest Service’s closeness with the lumber industry. National Parks were created in earnest shortly after the end of World War I in response to a rise in

automobile ownership and increased leisure time. This trend intensified in the 1920s as chambers of commerce, and state and local governments set up commercial enterprises around their parks and forests to net tourist dollars.⁷

Debates within the conservation movement over land use expanded during the interwar years to include questions about recreation. Historian Paul Sutter argues, in *Driven Wild*, for the need to “[rethink] the traditional and historiographical division between preservationists and conservationists” in environmental history.⁸ Sutter observed in his history of the wilderness movement that preservationists and conservationists were more united in their concern that recreation-oriented public parks were undermining the beauty of natural areas through development. This contention bears out in the history of Bernheim Forest during the 1930s and 1940s. By the 1950s, the Foundation began limiting recreation to activities compatible with promoting environmental stewardship, however, the definition of ‘environmental stewardship’ has changed over time. After the Second World War, board members and managers adopted an ecology-oriented strategy that helped align Bernheim Forest’s recreation, preservation and conservation mission.

As a private sector preservation site, Bernheim Forest was both influenced by and reacted against what was happening in the public sphere. Bernheim Forest’s mission developed during the interwar years in part out of uneasiness over dominant trends in recreation at public parks rather than as a planned effort in ecological conservation.

The broader conservation discourse and government policies influenced, but did not necessarily determine, the policy decisions within the Foundation. I.W. Bernheim, board of directors, technical managers and the public all had their own visions for the future of Bernheim Forest and its mission was often the result of layers of compromise. The realities of budget constraints and the physical landscape itself intersected with the founder’s changing and at times ambivalent intentions. The history of Bernheim Forest evolved out of these contingencies. Within the



first decade of its establishment, the Bernheim Foundation's property split into two distinct land management areas: the highly landscaped park-arboretum and the more primitive forest. I.W. Bernheim had a human-centered concept of how his Estate would serve the people of Kentucky and was more interested in the development of the arboretum. Over time, the board decided to serve the people of Kentucky by emphasizing a preservation agenda—a course not always immediately understood or readily accepted by the community.

An exploration of changing land-use practices at Bernheim Forest is important for several reasons. No published environmental histories exist that bring together Bernheim Forest's ecological and institutional record. This paper will touch on areas often neglected by environmental historians; namely, the recreation controversy during the interwar years and the role of private non-industrial forests in conservation. Bernheim Forest deserves a closer look because it is the largest privately owned forest in the state of Kentucky. The history of Bernheim Forest's land use and development is unique in that the Foundation has been free from many of the restrictions that define the agendas of state and federal parks and forests.

I.W. Bernheim was well known in Kentucky for the fortune he made in whiskey distilling and his philanthropic donations of public art. He had planned to leave a legacy of a public arboretum and herbarium on his fifty-acre estate in Anchorage, Kentucky, but after the premature death of his wife, he sold his property and moved to Denver, Colorado. An opportunity arose in 1928 for I.W. Bernheim to purchase a foreclosed thirteen thousand-acre farm in Bullitt and Nelson counties from a gentleman farmer who had only recently cobbled together the property out of a heavily logged forest and abandoned farms. The "bare, unattractive tract of wild land," just twenty-five miles south of Louisville, had been in an economical and ecological free fall by the early twentieth century.⁹

This mammoth project was significantly greater in scale and difficulties than I.W. Bernheim's original plans, partly due to its history of environmental abuse. During the eighteenth and nineteenth centuries, local residents felled trees to fuel the iron mining and salt industries in the area, and after depleting timber supplies to the limit of their available technology, the industries relocated. Locals turned to farming the hilly terrain and supplemented their income working for the growing whiskey distilleries and commercial logging enterprises. Logging and legal whiskey distilling decreased during Prohibition, and many locals exhausted their farms. One of Bernheim Forest's early managers made several failed attempts to grow grain in the 1930s for the Estate's workhorses on the former farmland, but found the soil's nutrients too depleted.¹⁰ In fact, work on the arboretum and the nurseries were held up for several years because the area required extensive soil conditioning.¹¹ After logging enterprises abandoned cutover land that was no longer profitable, uncontrolled forest fires burned away the top layer of humus and created serious soil erosion problems.¹² Ecological disaster,

outmigration and cheap land gave I.W. Bernheim the opportunity to move his legacy forward.

The Bernheim Foundation commissioned several independent contractors from 1929 to 1950 to survey the property and make recommendations for land use. Shortly after I.W. Bernheim purchased the property, he hired John Lafon, a forester of national repute. Lafon reported that the Foundation had three choices for land use: allow conditions to continue and let the forest revert to wilderness, manage the forest for fire protection only, or intensively manage the forest for a sustainable lumber yield and scientific research.¹³ Lafon recommended intense management, but warned it would require significant capital expenditure for roads, improvement thinnings, ranger stations, fencing, a nursery and professional foresters and rangers. The Foundation created the infrastructure for intensive management, but did not use it after I.W. Bernheim, in 1936, requested that work in the forest should be "merely a policy of watchful waiting."¹⁴

The Foundation hired the Olmsted Brothers Firm in 1932 to create a more comprehensive plan for the Estate than the Lafon report, which had entirely ignored the areas of recreation and wildlife. The Olmsted plan set aside areas for athletics, swimming pools, and an airplane landing field. The design included a layout for the arboretum as well as a plan to landscape the entire forested area.¹⁵ The Foundation rejected all but the layout for the arboretum, which was later modified into a simpler "landscape" arboretum.¹⁶ Though expense was a large factor in the Board's rejection of the Olmsted plan, many board members protested the development of extensive recreational facilities as well as the firm's purely aesthetic view of the forest. J.W. Browne, an influential founding member, urged that a demonstration forest should be "the most important feature of the estate."¹⁷ The Lacey Company, another early forestry consultant firm cautioned, in 1929, that a "strictly forestry venture" would be of little interest to visitors, and later the Olmsted Firm predicted that areas dedicated to hiking and timber production would be underused.¹⁸ However, board meeting minutes and business communications indicate that board members continued to see their primary goal as reforestation. Though internal debates continued over whether to manage the forest area for profit or wilderness preservation, the Board was more united in resisting the type of development that would attract visitors.¹⁹

In 1948, R.E. Bishop authored a report that satisfied board members who were in favor of a demonstration site as well as those who wanted to "preserve the wild state" of the forest.²⁰ He recommended timber management for profit and only minimal development of the two hundred-acre arboretum area. Though Bishop was a proponent of utilitarian forestry, he felt strongly about preserving the aesthetic beauty of the forest against the incursions of recreators and their automobiles. Bishop's report contains a number of colorful references about motorists and their "weapons of destruction."²¹ Bishop suggested limiting visitor facilities and access roads to avoid turning the forest into a



“Coney Island”—or in other words – a state park.²² Bishop lamented that state parks had deviated from their original purpose to provide an escape from the “strain of modern life.”²³

The United States had witnessed a rapid expansion of State and National Parks during the years leading up to the Bishop Report. The creation of the Civilian Conservation Corps (CCC) during the New Deal era helped open state parks to more visitors by improving roads and recreational facilities, but not everyone approved of developing the wilderness for modern tourism. Bernheim Forest, in Bishop’s vision, was in a unique position to emphasize its “original natural character,” because they did not have to give in to the pressure of visitors. Bishop did not see his plans for intensive forest management and preservation of natural beauty as antithetical, but they were incompatible with recreation. He cited I.W. Bernheim’s wish to provide the public “a place to further their love of the beautiful in nature” to justify barring athletics, concessions, camping and even scenic drives.²⁴

The Foundation’s chief forester, Frank Bunce followed up on the Bishop Report with his own master plan in 1951. The plan acknowledged the “unavoidable conflict between recreational use and conservation” on the Estate. Bunce interpreted I.W. Bernheim’s desire that the Estate be “for the use of the people” as akin to scientific forestry’s conservation principle, which is the “greatest good for the greatest number.” But unlike the earlier era of utilitarian forest, Bunce added an ecological basis to the forest’s value. With the exception of the Olmsted Brothers Firm, who were only minimally interested in the forest area, Bunce’s report was the first plan that did not suggest timber production. His report catalogued the forest’s assets in terms of its watershed and habitat protection, educational opportunities, scenery and recreation. Bunce was less hostile to recreation than Bishop and he approved of camping, scenic driving, fishing and other activities that did not require “natural beauty [to be] impaired by extensive development.”²⁵ The push for outdoor recreation increased after World War II with the democratization of the automobile, the shorter workweek and mandatory vacations. After Bernheim Forest opened to the public in 1950, visitation began to strain its existing infrastructure and the Foundation and its managerial staff looked for ways to solve the dilemma. Bunce suggested a policy to minimize publicity of the park’s recreational aspects, and in 1951 the Board dropped the word “park” from Bernheim Forest and Park, to simply Bernheim Forest. Bunce’s published articles, lectures and letters rarely mentioned Bernheim Forest’s recreational mission, although a brochure from 1962 lists “recreation” as one of its five “Purposes and Aims.” The other four were a “wildlife refuge,” “education in nature appreciation,” “preservation of a wilderness,” and “wildlife restoration and research” with very little emphasis on visitors.²⁶

The bulk of I.W. Bernheim’s private and official correspondence with the Board centered on just two hundred acres of the Estate, known as the Park. He wanted the area developed into an arboretum, natural history museum and art gallery based on the landscape design proposed by the Olmsted

Brothers Firm 1932. Many board members were less interested in the Park’s progress, and abandoned building the museum after I.W. Bernheim’s handpicked museum director had been on the payroll for several years.

The Foundation struggled with its mission to serve the public from the very first years. As early as 1932, board members felt it was necessary to regain “moral control of the premises” in response to joyriding, poaching and camping.²⁷ These strategies included enclosing the twenty square mile property in a double-stranded barbed wire fence that not only protected game but kept people out.²⁸ The recreation dilemma became more acute in 1950 after the Forest officially opened to the public. Some board members feared that too many visitors would undermine the forest’s natural beauty. Visitors, in the words of one forest manager, were “swarming” to the outdoors motivated by a desire to escape the city rather than “by a desire to . . . enjoy nature.”²⁹ Board members and forest employees had to navigate through the consequences of these less than contemplative forms of recreation. Picnicking and large social gatherings began to generate tons of garbage, strained existing facilities, and posed a threat to ecosystems.³⁰

The more vocal board members and the forestry-educated managers consistently downplayed I.W. Bernheim’s culturally oriented goals. The founder wanted the budget dedicated to the arboretum and park area, which he saw as the “main attraction.” At the same time, administrators complained that most visitors had to be “inveigled” to try a forest trail.³¹ A few years after I.W. Bernheim’s death, forest manager Frank Bunce wrote an article about Bernheim Forest for *The Kentucky Naturalist* emphasizing its conservation mission that could be traced back to the founder’s keen interest in reforestation and concerns over the nation’s rapid depletion of resources. Bunce portrayed I.W. Bernheim as a visionary who “foresaw the need for preservation of large natural areas.”³² I.W. Bernheim intimated that he wanted his legacy to do something for the “common man,” and by the 1950s the Foundation interpreted that to mean protecting and preserving the beauty of the “natural untouched landscape.”³³

I.W. Bernheim’s sometimes vague and contradictory directions for the forest area set up the conditions for a wide range of interpretation within the Foundation over the forest’s future. Budgetary constraints were an issue in the first decade, but conflict between board members was, by their own admission, partly to blame for the slow progress on the Estate.³⁴ An early debate, in 1936, between the President of the Board, C.F. Huhlein and another member, J.W. Browne, resembled what historians think of as the classic split between preservation and conservation. Huhlein wanted to preserve the forest as wild woodlands and thought preservation was the mission of the Estate. Huhlein included the following quote in the board minutes by Secretary Ickes of the Department of the Interior claiming it coincided with I.W. Bernheim’s wishes. Secretary Ickes had recently stated: “If I had my way about National Parks I would create them without a road in it. I would have it impenetrable



forever . . . a place where man would not try to improve on God.”³⁵

J.W. Browne, along with several prominent Louisville conservationists, assumed the Estate would become a revenue producing demonstration forest that would showcase sustainable forestry practices. In a private letter to I.W. Bernheim, Browne criticized the direction the organization was taking under Huhlein’s leadership. Browne complained that Huhlein was “always speaking of clumps of sassafras and groves of persimmons and pawpaws” rather than advancing the Estate.³⁶ J.W. Browne saw himself as a “progressive,” and characterized Huhlein as a “reactionary” for his sentimental view of the second growth forest.³⁷

Browne laid some of the blame for the lack of progress on both I.W. Bernheim’s scientifically and financially impractical directives, as well as his romantic perception of nature. He specifically protested I.W. Bernheim’s over reliance on technical experts like the Olmsted Brothers Firm in day-to-day matters and his wishes to return to the “horse and buggy days.”³⁸ These two opposing tendencies Browne observed in 1936, as well as I.W. Bernheim’s own correspondence, reveal the type of “modern and anti-modern impulses” that historian Karl Jakoby asserts were at the core of conservation.³⁹ A 1935 letter to the Board from I.W. Bernheim was typical of his requests. He wanted reassurance that the arboretum be “scientifically plotted,” and in the next sentence requested that the entire forest resemble a “large, very large, artistic canvas.”⁴⁰ I.W. Bernheim, according to Browne’s 1936 letter expected the staff to accomplish large-scale projects—without tractors. Though Bernheim relented and purchased a tractor, his nostalgia and lack of interest in timber production helped tilt forest management in a preservationist direction.

The Board compiled a report in 1936 based on their correspondence and conversations with I.W. Bernheim, and their findings exposed and generated confusion over the Foundation’s mission. Because I.W. Bernheim revealed his plans for the Estate “bit by bit,” the report was an attempt to reconcile the diverse and sometimes conflicting directives of the founder.⁴¹ Over the course of sixteen years, goals for the estate ranged from primeval forest wilderness, utilitarian demonstration forest, arboretum and game preserve, to museum, art galleries and a recreation park. The Board concluded that the founder’s primary goals for the Estate were the development of recreational amenities such as picnic locales, roads for scenic drives and bridle paths to compliment the future arboretum and museum.⁴² The report recalled that at the time of incorporation the trustees were led to believe that their objective was to develop the entire estate from a “forestry standpoint” and that a primeval forest would be the main attraction for visitors.⁴³ After I.W. Bernheim received the report, he reassured the Board that maintenance of the wildlife sanctuary and reforestation of the more heavily logged areas were a “sacred” task, although secondary to the arboretum.⁴⁴ The report’s writer expressed I.W. Bernheim’s growing interest in the arboretum-park as one of the “major problems” facing the

estate.⁴⁵

I.W. Bernheim wrote, in several letters, of his desire to do something for “the common-man” in connection with his philanthropy. In a 1943 letter to his grandson, he shared his hope that the natural landscape on the Estate would foster, in regular citizens, a sense of liberty, justice and equality. Nature, he believed, was free from class distinctions, racism, and religious persecution.⁴⁶ These sentiments express Progressive Era perceptions that nature could “restore civic virtue” and act as a source of “moral authority.”⁴⁷ I.W. Bernheim’s philosophical outlook had little to do with utilitarian forestry and preservation for preservation’s sake, and tended toward a more people-centered agenda. A 1939 letter, to be read annually to the Board and cited by the Foundation as Bernheim Forest’s original mission statement, the founder specified his dream. He reiterated his desire for a natural history museum, art gallery and an arboretum that should be “forever free” for the people of Kentucky.⁴⁸ He did not directly mention conservation in this seminal letter and instead focused on the Park area and its recreational aspects. While I.W. Bernheim often said the Estate was for the “use of the people,” he was also clear that certain forms of recreation should not be considered. It was his belief that consumer oriented and overly mechanized recreation should have no place on the Estate.⁴⁹

The plans to build an arboretum and recreational area on a small portion of the Estate and leave the majority forested, prompted board members and people in the community to see similarities between the Estate and federal and state forests and parks. In 1932 the Olmsted Brothers firm even recommended turning over the Estate to a state agency, and they were not the first to make this suggestion. Lafon’s 1929 report talked about the possibility of turning the land over to state or federal agencies, but for different reasons than the Olmsted Firm. The landscape architects with the Olmsted Firm felt their comprehensive plan for recreation facilities would prove too burdensome. As a forester, Lafon did not discuss the recreation potential in his report. In fact, he believed that if the Estate were used for anything but intensive forestry to produce timber for the market, then the land should not be left in private hands.⁵⁰

Historically, private nonprofits “have acquired environmentally valuable lands for transfer to public agencies,” but the Bernheim Foundation proceeded in a different direction.⁵¹ In 1935, the U.S. Forest Service requested that the Foundation donate land to the state to form part of a 100,000-acre forest. I.W. Bernheim personally responded to the request in a letter stating that his “property was intended to fill services entirely incompatible with those rendered by the government.”⁵² Board members, however, were faced with fiscal and physical realities that, in their minds, necessitated cooperation with the state. Stipulations of the trust agreement limited the flow of money from the corpus of the trust into the operating budget of the Foundation until after the grantor’s death. Cooperation with state agencies during the Great Depression helped stretch Bernheim



Forest's reduced annual budget. In 1933, the Kentucky Welfare Society furnished two hundred men providing 7,265 man-days of work in exchange for meals and a place for the workers to go during the day.⁵³ State agencies also provided hard to find technical expertise. Bernheim Forest's remoteness limited the labor pool to the population of subsistence farmers living in the immediate vicinity—individuals who some of the board members viewed as a “primitive type of lawless people.”⁵⁴ In 1929, the Estate could afford only six men to do all of the outdoor work and patrol the forty-two mile perimeter to prevent trespassing, poaching and fire hazards.

Concurrent with the management challenges at Bernheim Forest, the Commonwealth of Kentucky was looking to capture the revenue generated from the lucrative sports-hunting industry. In 1934, the National Resources Board estimated that “hunters and tourists spent \$10,000,000 in pursuit of game” in Kentucky, while the real value of wildlife resources was about half of that figure.⁵⁵ In 1930, the Bernheim Board contracted with the State Fish and Game Commission land for the State to propagate wildlife in exchange for a game warden at no cost to the Foundation. State officials released exotic elk-sized European red deer, while at the same time, they exterminated the predators of deer and predators of valuable furbearing animals.⁵⁶ These actions led to severe damage to the forest undergrowth and the arboretum's nursery. I.W. Bernheim demanded and received an end to the contract, over the protests of board members. Within a few years of I.W. Bernheim's death, the Foundation signed a ten-year contract with the Kentucky Division of Fish and Game and the U.S. Fish and Wildlife Service to manage the entire property as a big game refuge. And in 1959, the Foundation leased the 4000-acre “south block” to create Knob State Forest, because the Estate could not adequately patrol the area.

Even if Bernheim Forest had not needed the help of state agencies, it is unlikely that the Board would have made a radical departure from the style of land management practiced in most of the nation's public forests. The hiring pool of expert contractors and forest managers was the same for private entities and government owned land. From 1929 to 1950 the Foundation went through six managing superintendents of which the majority were graduates of forestry school.⁵⁷ Some of the Estate's early managers, Ronald Craig, T.W. McKinley and Frank Bunce worked for many years in the U.S. Forest and National Park Services before their employment at Bernheim Forest. With the exception of the European red deer problem, Bernheim Forest's managers were comfortable working with governmental organizations.

The Bernheim Estate was established during a period of vigorous debate about land use in Kentucky by state and local activists, scientists and businessmen. These debates centered on three broad areas; utilitarian conservation, wilderness preservation and outdoor recreation which often overlapped.

Unlike state and federal parks and forests, the Bernheim Foundation did not rely on public funding, but its evolution was determined to a certain extent by public opinion. Governing board members and the managing foresters wanted to take the Estate in a direction that reflected various issues in the contemporary conservation discourse. The *Courier-Journal* and the *Herald-Post* ran articles on the incorporation of the Bernheim Foundation in July of 1929. Both articles reflect on the numerous possibilities for the Estate's future and the community's expectations for its use.

According to the *Louisville Times*, I.W. Bernheim purchased the land for “the purpose of returning it to its primitive state and affording a permanent bird and animal sanctuary.”⁵⁸ The article reported that I.W. Bernheim's wish was for the public to use the forest and arboretum “in the same manner and for the same purposes as State and National forests and parks.”⁵⁹ The importance of the Estate, at least from the journalist's perspective, was the Foundation's choice to manage the forest intensively for a timber crop, in an effort to save “Kentucky's diminishing timber lands.”⁶⁰ They did not perceive the plans for wilderness preservation, recreation, and timber production as contradictory objectives.

Later that month the *Herald-Post* covered the story with the headline “Foundation to Protect Natural Beauty and Wild Life Against ‘Improvements’ and Hunters.”⁶¹ This article focused on the proposed game sanctuary and did not mention timber management or the arboretum. The article asserted that the Estate would not attempt to create a park, and that nothing would be done to interfere with “its natural beauty.”⁶² In the same edition, an interview with Tom Wallace about Kentucky's reforestation problem contained the following quote:

“It is most fortunate that the Bernheim Foundation will administer the tract. It could not be turned over to the State as a gift with any prospect of intensive management beginning at once, as it will have in its existing circumstances.”⁶³

I.W. Bernheim was clearly invested in providing recreation on his newly acquired property. The 1929 Articles of Incorporation state that the grantor donated his land to Kentucky for “use as a public park.” However, he impressed upon the board members in the same year that he did not want “the park to be thrown open to campers, particularly those of the ‘motor gypsy variety’.”⁶⁴ The automobile made ‘gypsying’ possible, and expanded the vacation experience beyond elite hotel resorts to include the middle class. This new form of recreation was accompanied by an invasion of “consumerism, tourism, mechanization, advertising, landscape architecture” into the natural environment.⁶⁵ “Auto-camping” boosted the local economy but harmed ecosystems and, in the opinion of many, undermined the aesthetics of nature.⁶⁶



In I.W. Bernheim's seminal 1939 letter outlining major future projects and the overarching mission of the Estate, he inserted a sentence expressly forbidding the sale of merchandise within the park. I.W. Bernheim's wishes for the Estate evolved and were often vague and contradictory. He remained, however, very clear in his objections to camping, commerce, hunting and government management on the Estate. The founder's wishes for recreational activity on the Estate were nuanced and were most likely a response to the collision of his Progressive Era romantic view of nature with the commercialization of natural areas during New Deal conservation.

The early years of Bernheim Forest's history were crucial to its present incarnation. Board minutes, letters, and institutional documents show that the founder wanted to provide a recreation oriented park, and was not as interested in the forest area. Over time, the Board, managing foresters and consultants refashioned the concept of developing the Estate "for the use of the people" into something less accessible to the public for recreation. If the public had a voice in this direction, Bernheim Forest would probably resemble a state park or forest. Instead, the Bernheim Foundation steered the estate in a preservationist direction. By the 1950s, the Foundation began limiting recreation to activities compatible with promoting environmental stewardship, a concept that has changed over time. After the Second World War, board members and managers adopted an ecology-oriented strategy that helped align Bernheim Forest's recreation, preservation and conservation mission. This case study of Bernheim Forest reveals a more complex story than the macro level understanding of the politics and philosophy behind the conservation movement. Though the Foundation's history should be viewed within the context of the interwar years, many of the policies were driven by individual visions. Ultimately, the people who influenced and shaped the development of Bernheim Forest cannot be put into the discrete categories that represent the factions in the conservation movement.

References

- Bernheim Foundation Papers, University Archives and Resource Center, Ekstrom Library, Louisville, Kentucky.
- Best, Constance. *Americas Private Forests*. Washington: Island Press, 2001.
- Jakoby, Karl. *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of Conservation*. Berkeley: University of California Press, 2001.
- Sutter, Paul S. *Driven Wild: How the Fight Against Automobiles Launched the Modern Wilderness Movement*. Seattle: University of Washington Press, 2002.

End Notes

- 1 Vandals spray-painted the phrase "parks are for people" on I.W. Bernheim's famous 'let there be light' granite memorial statue in 1970. Frank Bunce, "Progress Report," Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 15.
- 2 Isaac W. Bernheim, "Closing Chapters of a Busy Life," (Denver, Co.: Welch Haffner Printing Co.: 1929), 81.
- 3 "Jenkins Report in Board minutes" 15 July 1936, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 207.
- 4 Isaac W. Bernheim, Denver, Co., to Bernheim Foundation Board of Trustees, Louisville, Ky., 30 August 1939, TLS, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville.
- 5 The I.W. Bernheim Foundation's property has changed names several times. The Bernheim Estate became known as the Bernheim Forest and Park, and in 1951 the Board eliminated the word "park" from all signs, literature and correspondence. Bernheim Forest became the Bernheim Arboretum and Research Forest in 1989. I refer to the property as Bernheim Forest or as it was known in the early years, the Estate.
- 6 Paul S. Sutter, *Driven Wild: How the Fight Against Automobiles Launched the Modern Wilderness Movement*, (Seattle: University of Washington Press, 2002), 25.
- 7 Ibid.
- 8 Ibid., 15.
- 9 "Board minutes" 11 October 1935, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 10 "Board minutes" 14 June 1931, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 11 "Board minutes" 4 October 1929 Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 19.
- 12 John Lafon, "Lafon report" 1 January 1929, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 1.
- 13 John Lafon, "Lafon Report" 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 8.
- 14 I.W. Bernheim, Denver, Colorado, to [I.S. Jenkins, Louisville, Kentucky] TLS, 25 June 1936, Board minutes 6-25-36, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.



- 15 "Olmsted Brothers Firm report" 1932, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 7.
- 16 Although I.W. Bernheim wanted the arboretum "scientifically plotted," by the 1950s managers modified it into a "landscape" arboretum. Landscape arboretums incorporate features from the surrounding native environment, such as meadows and pre-existing plant and tree communities. This policy was less expensive and labor intensive than I.W. Bernheim's original vision and prevented a majority of the budget from being spent on the horticulture area.
- 17 J.W. Browne, Louisville, Kentucky, to [I.W. Bernheim, Denver, Colorado], TLS, 9 September 1936, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 3.
- 18 Thomas Alexander, Chicago, Illinois to [I.S. Jenkins, Louisville, Kentucky], TLS, 25 October 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 2.
- 19 As early as 1932, board members deemed it unadvisable "to locate the principle attractions of the estate for the convenience of the tourists." "Board minutes" 15 September 1935, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 20 R.E. Bishop, "The Bernheim Forest-Park Report" 15 May 1948, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 5.
- 21 Ibid., 7, 8.
- 22 Ibid., 14.
- 23 Ibid.
- 24 I.W. Bernheim, Colorado, Denver, to [Bernheim Foundation, Clermont, Kentucky], ALS, 30 August 1939, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 25 Frank Bunce, "Master-Plan" 2 October 1951, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 16.
- 26 "Bernheim Forest brochure" 2 February 1962, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 27 "Board minutes," 12 September 1932, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 2.
- 28 "Board Minutes" 17 September 1935, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 177-78. Fencing took precedence over all other projects for the years 1932 and 1933. "Board Minutes" 28 July 1932, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky,
- 29 Frank Bunce, "The Forest," *The Kentucky Naturalist*, July 1952, 57.
- 30 Four tons of trash was generated over Fourth of July weekend in 1951. Frank Bunce, "Progress Report" 14 July 1951, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 4.
- 31 Robert Paul, "Description of Bernheim Forest" (speech given to the Filson Club Louisville, Kentucky, 1945), 9. I.W. Bernheim, Denver, Colorado to [I.S. Jenkins, Louisville, Kentucky], ALS, 21 July 1936, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 32 Frank Bunce, "The Forest," *The Kentucky Naturalist*, July 1952, 57.
- 33 Robert Paul, "Description of Bernheim Forest" (speech given to the Filson Club Louisville, Kentucky, 1945), 4.
- 34 J.W. Browne, Louisville, Kentucky, to [I.W. Bernheim, Denver, Colorado], ALS, 9 September 1936, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 5.
- 35 "Board minutes" 1 August 1933 University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 36 J.W. Browne, Louisville, Kentucky, to [I.W. Bernheim, Denver, Colorado], ALS, 9 September 1936, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 7. J.W. Browne wanted intensive forestry similar to the recommendations Lafon made in his 1929. This involved planting trees, removing 'defective' trees, and making improvement thinnings.
- 37 Ibid., 3.
- 38 J.W. Browne, Louisville, Kentucky, to [I.W. Bernheim, Denver, Colorado], ALS, 9 September 1936, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 2.
- 39 Karl Jakoby, *Crimes Against Nature: Squatters, poachers, thieves, and the hidden history of conservation*, (Berkeley: University of California Press, 2001), 16.
- 40 "Board Minutes" 30 October 1935, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 188.



- 41 “Board minutes” 30 October 1936, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 42 “Board minutes” 15 April 1936 University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 205.
- 43 Ibid.
- 44 Ibid.
- 45 Ibid.
- 46 I.W. Bernheim, Denver, Colorado to [I.W. Burnham], ALS, 1 November 1943, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky. In this letter to his grandson I.W. Bernheim explained that the key to understanding why he formed the Foundation was in the inscriptions he commissioned for the statue of Thomas Jefferson located at Sixth and Liberty Streets in Louisville, Kentucky. I have made conjectures here about I.W. Bernheim’s motivations based on other letters and on the inscriptions: “I have sworn upon I have sworn upon the altar of God eternal hostility against every form of tyranny of the mind of man” and “Equal and exact justice to all men, or whatever state or persuasion religious or political.”
- 47 Sutter, 22.
- 48 I.W. Bernheim, Colorado, Denver, to [Bernheim Foundation, Clermont, Kentucky], ALS, 30 August 1939, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 49 Ibid.
- 50 John Lafon, “Lafon Report” 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 15.
- 51 Constance Best and Laurie Wayburn, *America’s Private Forests: Status and Stewardship*, (London: Island Press, 2001), 39.
- 52 I.W. Bernheim, Denver, Colorado to [C.F. Huhlein, Louisville, Kentucky], ALS, 12 November 1935, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 3.
- 53 “Board minutes” 25 April 1933, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 54 “Board minutes: Report of the Secretary to the Board of Trustees” 15 April 1933, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky, 209.
- 55 “Board minutes” 1 April 1935, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 56 Most of the animals that were exterminated were classified as “varmits”. A partial list includes owls, hawks, crows, and foxes. “Board minutes” 14 July 1934, Bernheim Foundation Papers, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 57 Jim Browne, the general manager from 1939 to 1949, had worked in administration at I.W. Bernheim’s whiskey distillery and there is no indication from the material in the Foundation’s papers that Browne had any forestry background. It is possible that Browne may have relied more heavily on help from governmental agencies because he lacked the technical expertise.
- 58 “13,100-Acre Forest Preserve For State” newspaper clipping in board minutes taken from the Louisville Times, 8 July 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 59 Ibid.
- 60 Ibid.
- 61 “Preserve of 13,100 Acres To Be Opened to Public By I.W. Bernheim Estate” newspaper clipping in board minutes taken from the Herald-Post, 19 July 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 62 Ibid.
- 63 “Wallace Lauds Plan” newspaper clipping in board minutes taken from the Herald-Post, 19 July 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 64 “Board Minutes” 26 November 1929, University Archives, Ekstrom Library, University of Louisville, Louisville, Kentucky.
- 65 Sutter, 16.
- 66 Sutter, 11.

Important Reminder

**If you a new address or no longer wish to receive Sustain Magazine,
please get that information to us as soon as possible.**

**Contact Russ Barnett at
r.barnett@louisville.edu
or call (502) 852-1851**

UNIVERSITY OF
LOUISVILLE[®]

**Kentucky Institute for the
Environment and Sustainable
Development**

203 Patterson Hall
University of Louisville
Louisville KY 40292

Non-Profit Org.
U.S. Postage
Paid
Louisville, KY
Permit No. 769