

# Toward a History of Environmental History in the National Parks

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ENVIRONMENTAL HISTORY APPEARS TO BE ON THE ASCENDANCE in the national parks. Increasing numbers of scientists and resource managers at all levels of the National Park Service (NPS) are using it to help them understand the interrelated human and non-human processes that have shaped the landscapes and resources in their care. Perhaps my own experience exemplifies the trend. Since 1995, I have participated in environmental history projects at Great Sand Dunes National Park and Preserve, Cache la Poudre River National Heritage Corridor, Sand Creek Massacre National Historic Site, Pecos National Historical Park, and Rocky Mountain National Park.<sup>1</sup> In addition, I have been working on a history of livestock grazing in the national parks, and although this is an administrative history that emphasizes management policies and decisions, it is informed by my understanding of environmental history.

All of these projects initially reinforced my sense that environmental history is a new methodology in the parks. Many of my NPS sponsors and research partners have told me that they think it is new, and the history of the field seems to support their claim. The American Society for Environmental History was founded in 1977, a relatively recent date in the history profession's evolution. Richard White titled his landmark 1985 essay "American Environmental History: The Development of a New Historical Field."<sup>2</sup> Not until the 1990s did academic history departments begin to train and hire substantial numbers of PhDs with environmental history expertise. The application of environmental history to resource management in the parks seems to be yet another sign of its increasing popularity. Thus my response to each park project on which I have worked has been the same: Isn't it remarkable that scientists and resource managers are recognizing the importance of this up-and-coming field?

Lately, however, I have begun to wonder if environmental history really is new to the parks, and indeed, even if it is a new field. My reading of national park documents has given me doubts. *Fauna of the National Parks of the United States*, for example, by George Wright, Joseph Dixon, and Ben Thompson, published in 1933 and generally known as *Fauna no. 1*, laid out a detailed outline of historical methodology for studying national park wildlife populations. "Determine original status of fauna in the park region," the three scientists direct-

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ed. "Study the evidence on the ground.... Interview pioneers, early residents, etc.... Search written records.... Determine the history of the fauna in the region under white man's influence...."<sup>3</sup> Wright and his colleagues were not historians in the conventional sense, but their approach to the past calls into question easy assumptions about the newness of environmental history in the parks and its newness in general.

Some of the scientists and resource managers with whom I have worked have eroded my certainty even more. David Cooper, botanist, ecologist, and my colleague at Colorado State University, welcomed me as a national park research partner. Cooper learned from his doctoral adviser to ask historical questions of the landscapes that he studied, and he told me that our respective approaches to environmental history overlap by perhaps "75 percent."<sup>4</sup> Cooper and I are among several scientists, historians, and agency personnel who have begun to work on the environmental history of Rocky Mountain National Park and other sites, including on projects originated and headed by Ben Bobowski, a rangeland ecologist and the park's chief of resources. NPS once assigned Bobowski the difficult task of reducing the number of livestock in Glen Canyon National Recreation Area. He found that he was most effective if he knew the history of the landscape and the environmental biographies of the graziers who ran the cattle and the Bureau of Land Management range conservationists who kept the permits.<sup>5</sup>

So is environmental history in the national parks new or not?<sup>3</sup> That question provides an opportunity to survey the history of environmental history and its place in the study and management of the parks. Such a survey might help scientists, historians, and NPS managers to understand better what environmental history is, what it might do for them, what its problems might be, and how it might serve them as an interdisciplinary methodology. That environmental history is not entirely new to the parks does not mean that scholars and professionals involved in its study completely agree on what it is or what it is for. The 75% overlap that Cooper identified in his work and mine is important, because it demarcates the intellectual ground on which scientists and historians can work together in pursuit of shared research objectives. But the 25% difference is important, too, because it delineates the disciplinary distinctiveness in how science and the humanities approach the past, and how each might have to flex in order more fully to cooperate with the other.

Here is a summary of my answer to the question of whether or not environmental history is new to the parks. Although this explanation reflects my scholarly assessment of written evidence, it also draws heavily on my personal experience, so readers should keep in mind my subjectivity and the limitations of my view. National park environmental history, it seems to me, is the outgrowth of a much older effort to identify and understand nature and the causes of environmental change. Going back at least as far as the early 19th century, scholars tried to describe the contingent, interrelated historical events, human and non-human, that shaped organisms, landscapes, and societies. No ideal label exists under which to categorize this work, but natural history might serve the purpose.<sup>6</sup> Rooted in Enlightenment empiricism, natural history gave rise to field biology, anthropology, geography, environmental history, and other disciplines, and it influenced early research in the parks. During the 20th century, academic specialization, reductive methodologies, bureaucratic compartmentalization, and other factors weakened it in academia and NPS. Nonetheless, the multidisciplinary cul-

ture of NPS—and, perhaps most important, the agency’s need to understand and explain the histories of the resources in its care—sustained a persistent emphasis on natural history. History, meanwhile, remained a broad, synthetic academic discipline, and under the influence of 1970s environmentalism, historians wedded natural history and its descendents—primarily geography and ecology—to agricultural, economic, intellectual, political, and social history to create environmental history. The conjunction of environmental history with a vestigial NPS natural history gradually created the conditions for today’s interdisciplinary national park environmental history.<sup>7</sup>

A brief survey cannot do justice to the origins and development of natural history, but perhaps I can begin by tracing the story from the late 18th and early 19th centuries, when academic and disciplinary boundaries did not constrain scholars and writers from studying nature in terms of historical processes that included humans. An argument can be made that the founder of modern natural history—and thus environmental history—was the Prussian scientist, explorer, and humanist Alexander von Humboldt. A holistic polymath who recognized the interconnection and unity of all things in the flow of time, “his foundational assumption,” according to the intellectual historian Laura Dassow Walls, “was that neither humans nor nature can be understood in isolation.”<sup>8</sup> Humboldt’s interests carried him into geology, botany, climatology, ethnography, history, and much more, and he synthesized his findings in massive works of astonishing ambition, most notably his multivolume *Cosmos: A Sketch of the Physical Description of the Universe* (1845–1862). “The principal impulse by which I was directed,” he wrote of its composition, “was the earnest endeavor to comprehend the phenomena of physical objects in their general connection, and to represent nature as one great whole, moved and animated by internal forces.”<sup>9</sup>

Although Humboldt’s influence on natural history was considerable, 20th-century scholars lost sight of it. Wars, revolutions, and political reactions, such as the suppression of German culture that accompanied the entry of the United States into World War I, eventually weakened Americans’ memory of him. Equally important, modern scholarly specialization, in part the logical consequence of problems that Humboldt himself encountered in his struggle to master numerous scientific methodologies, gradually fragmented the intellectual unity to which he aspired and severed the study of humankind from the study of non-human nature. Only recently have scholars begun to rediscover how profoundly he shaped the interdisciplinary approach that defined natural history and that eventually yielded environmental history, among other disciplines.<sup>10</sup>

Following Humboldt, perhaps the greatest natural historian was Charles Darwin. *On the Origin of Species by Means of Natural Selection* (1859) laid out the evidence for a process—“descent with modification through natural selection”—according to which organisms changed over time. This “plan of creation,” he wrote, called on humanity to “regard every production of nature as one which has had a history.” Human beings themselves were part of the historical process. In their domestication of animal breeds, they were agents of change who provided striking examples of the effect of selection—intentional and unconscious—on species. And humans, too, were the objects of natural selection, the products of their own long, complex natural history.<sup>11</sup>

Whereas Darwin focused on species, other 19th-century scholars focused on geogra-

phy. And whereas Darwin, in contrast to Humboldt, recognized a ruthless “struggle for existence,” a “war of nature, from famine and death” within the harmony and unity of natural selection, other scholars differentiated humanity from the rest of nature because of its self-destructive tendency to wreck nature’s order. Of signal importance in this geographical and declensionist approach was George Perkins Marsh, whose *Man and Nature; Or, Physical Geography as Modified by Human Action* (1864) argued that “man is everywhere a disturbing agent” who upset nature’s balance and literally eroded the capacity of civilizations to sustain themselves. Marsh surveyed the histories of Mediterranean societies and linked their demise to environmental processes such as overgrazing and deforestation and the silting up of harbors. Marsh was one of the first scholars, if not the first, to link human history and environmental change in such a dramatic fashion.<sup>12</sup>

The kinds of natural history that took shape in the 19th century flourished in the twentieth. The literature is vast and beyond the scope of this essay, but several examples stand out. John Muir, one of founders of the Sierra Club and a champion of Yosemite National Park and the Sierra Nevada, pieced together the geological history of the mountains and argued that the slow grinding work of glaciers, less sudden catastrophic disturbances, gave the peaks, canyons, and valleys their distinctive form. Detailed in various essays, Muir’s findings took popular form in *The Mountains of California* (1894), one of his most famous works.<sup>13</sup> Close observation of natural history centered not just on geology, but also on changes in flora and fauna as observed and experienced across a lifetime. In *Tutira: The Story of a New Zealand Sheep Station* (1921), Herbert Guthrie-Smith recorded in meticulous, vivid detail the ecological changes that accompanied the introduction of livestock husbandry to the North Island of New Zealand, and in particular the “invasion” of alien species as colonial agriculture transformed the environment.<sup>14</sup> Like Darwin, Marsh, and many others, Muir and Guthrie-Smith were amateur natural historians; but like Darwin and Marsh, their worked anticipated and influenced professional scholars later on, including those who studied and wrote about national park landscapes.

Beginning in 1916, William Skinner Cooper (no relation to David Cooper), a botanist with a PhD from the University of Chicago, conducted fieldwork at Glacier Bay, Alaska, where he observed evidence of vegetation destruction and “reinvansion” as glaciers advanced and retreated. In “The Recent Ecological History of Glacier Bay, Alaska” (1923), Skinner Cooper drew on his fieldwork and a range of historical sources, including a field reconnaissance by John Muir, to advance a historical argument: “I aim to lay emphasis upon the fact of unceasing change as the fundamental basis of vegetational study, a thesis that is unusually plain in the present case, but true universally.”<sup>15</sup> Not only was Skinner Cooper an astute scientist, he was a conservationist who led other scientists in urging President Calvin Coolidge to establish a national monument at the site, which Coolidge did in 1925. Because of Skinner Cooper’s efforts, his admirers referred to him as “the father of Glacier Bay National Monument.” In 1956, further demonstrating the intellectual eclecticism characteristic of natural historians, he authored *A Contribution to the History of Glacier Bay National Monument*, an account of the monument’s founding.<sup>16</sup>

As the 20th century unfolded, more and more natural history scholars were, like Skinner Cooper, academically trained professionals with advanced degrees in fields such as biology,

geography, anthropology, and history, but who nonetheless exhibited characteristics of the older interdisciplinary approach. “Ecology is a new name for a very old subject,” Charles Elton wrote in *Animal Ecology* (1927). “It simply means scientific natural history.” Elton sustained this point of view in subsequent works, such as *The Ecology of Invasions by Animals and Plants* (1958), which recalled the scholarship of Herbert Guthrie-Smith. In “The Morphology of Landscape” (1925), “Theme of Plant and Animal Destruction in Economic History” (1938), and numerous other writings, the geographer Carl Sauer carried forward themes first explored by Marsh. By the 1940s, the wildlife scientist Aldo Leopold developed research and teaching techniques in which he and his students combined information from the records of trappers, explorers, and settlers with scientific data to produce histories that would help them to assess the condition of specific landscapes. The historian James Malin similarly recalled the natural history tradition by combining detailed knowledge of climate, soils, and botany with his historical perspective in works such as *The Grassland of North America: Prolegomena to its History* (1947).<sup>17</sup>

In his sensitivity to the historical, religious, and aesthetic elements of science and scientific subjects, the ecologist G. Evelyn Hutchinson perhaps most strongly manifested the tradition of Humboldt. “[A]lthough not self-consciously ‘Humboldtian,’” according to the historian of science Sharon Kingsland, Hutchinson “nonetheless approached science in a way that is strikingly similar to that of his great predecessor.” Similarities to Humboldt might be read in “The History of a Lake,” published in 1942: “A complete knowledge of the laws involved in the phenomena” that shaped the histories of lakes “might be of the greatest practical importance,” because “a rational feeling for the equilibria involved must be inculcated into the minds of future men of affairs if we are ever to achieve that harmonious existence which alone will justify the evolutionary ascendancy of our species.”<sup>18</sup> Scholars such as Elton, Sauer, Leopold, Malin, and Hutchinson did not follow the same lines of research, exactly, nor did they and their findings necessarily agree. But in their broad-based effort to understand environmental change, the interrelated human and nonhuman forces that caused that change, and the meaning of science and nature to humanity, they and others like them sustained a common interdisciplinary intellectual milieu.

Among those who were part of this natural history milieu, I would argue, were the national park scientists George Wright, Joseph Dixon, and Ben Thompson. All three studied at the University of California at Berkeley, under Joseph Grinnell, a biologist devoted to field work, the condition of wildlife in the national parks, and public education. While working for NPS at Yosemite, Wright discussed wildlife conditions with the naturalist Carl P. Russell, a biologist with an interest in the early American West who later authored meticulously researched histories of Yosemite, firearms, and the tools and implements of the fur trappers. It is possible that Russell influenced the approach to history that Wright laid out in *Fauna no. 1*, his survey of national park wildlife conditions. “Dr. Carl P. Russell, field naturalist,” Wright and his colleagues acknowledged, “was instrumental in the original conception of the idea and has both inspired and advised the survey all along the way.”<sup>19</sup>

The pinnacle, perhaps, of 20th-century natural history was the publication of a massive survey of planetary environmental change, *Man’s Role in Changing the Face of the Earth* (1956). Dedicated to George Perkins Marsh and based on an international conference held

the year before its publication, the book featured dozens of papers on the many ways that humankind had altered soil, water, animals, plants, and other features of the global environment. Authored by anthropologists, ecologists, historians, and especially geographers, it was an intellectual extravaganza that illustrated the interdisciplinary approach to environmental change that had become the hallmark of natural history. The breadth that characterized the book and its authors—the geographer Carl Sauer, the ecologists Marston Bates, Frank Fraser Darling, and Paul Sears, the planner, architectural critic, and historian Lewis Mumford, the historian James Malin, the anthropologist Omer Stewart, the hydrologist Luna Leopold, and others—almost certainly typified many of its readers.<sup>20</sup> My copy, which I purchased for \$1.50 at a book sale to benefit Colorado State University's Morgan Library, once belonged to Gordon W. Hewes, an anthropologist at the University of Colorado at Boulder. Hewes's expertise spanned a remarkable range of specializations, including ethnology, archaeology, linguistics, and physical anthropology, and according to his colleague Duane Quiatt, "he pursued anthropology as an eclectic and synthesizing discipline."<sup>21</sup>

Yet even as scholars such as Hewes acquired copies of *Man's Role in Changing the Face of the Earth*, natural history was in trouble. The disciplines that could be traced back to thinkers such as Humboldt, Darwin, and Marsh were entering a phase in which they were becoming exceedingly narrow, reductive, instrumental, and concerned with intellectual boundaries. Fearful of the taint of geographical determinism, geography retreated from its commitment to studying humankind's place in the environment and redefined itself as a spatial science.<sup>22</sup> To the extent that American historians invoked the environment, they often did so in static, even deterministic, terms. Other historians retreated from environmental interpretations and focused on culture and politics while borrowing theoretical concepts from social sciences such as psychology.

Ecology, the science of the relationships among living things and their environments, more and more focused not on the historical processes that had produced specific landscapes, but on the use of mechanistic theoretical models from cybernetics, operations research, and systems analysis to statistically measure the cycling of material and energy through the "ecosystem." Sharon Kingsland has described a "growing divorce between modern ecology and natural history" as proponents of ecosystem science distanced themselves from an older method that they thought lacked rigor, was intellectually soft, and conferred low status.<sup>23</sup> Even scientists who worked within the natural history tradition, such as Evelyn Hutchinson, participated in the fragmentation and reduction of ecology to abstractions. Ironically, Hutchinson's very breadth and open-mindedness to new approaches, so typical of Humboldt, led him to the study of biogeochemical cycles and to support students and postdoctoral researchers who advanced daring interpretations based on that method. Thus even when Hutchinson wrote of the history of a lake, it was not a contingent history of a specific place, but rather a mechanistic history, largely if not totally devoid of people, which unfolded from underlying material laws.

Developments in the national parks and NPS also contributed to the waning of natural history. George Wright, who had subsidized the first scientific wildlife surveys in the NPS with his own money, died in an automobile collision in 1936 near Deming, New Mexico, on his way back to California after an official visit to Big Bend National Park in Texas. Weakened

by Wright's death, the New Deal's emphasis on national park infrastructure, the diversion of funds and labor to the World War II effort, and then the drive to accommodate millions of new visitors and enlarge the national park system during the postwar Mission 66 era, NPS's research program took decades to recover.<sup>24</sup>

Despite the trend toward intellectual reductionism and research specialization, versions of a holistic natural history persisted in the various disciplines. In agricultural history, a few scholars continued to concern themselves with climate, soil, plants, animals, forests, and human-land relationships. The idea of nature and the politics of conservation remained important to a small but important circle of scholars in various disciplines. A handful of students benefited from a propitious combination of circumstances and found advisers who helped them prepare graduate theses that harkened back to the approach pioneered by George Perkins Marsh. A native of Arizona, James Rodney Hastings earned a bachelor's degree in chemistry and English at the University of Chicago. During the late 1950s, he began graduate work in history at the University of Arizona. In 1963, Hastings completed his doctoral dissertation, "Historical Changes in the Vegetation of a Desert Region," a survey of environmental change in the Arizona borderlands (including Saguaro National Monument) that combined research in an astonishing range of primary source documents with the technique of repeat photography.<sup>25</sup>

Hastings's dissertation was a model of natural history. His bibliography cited an eclectic mix of science and history scholarship, including the work of the historians James Malin and Walter Prescott Webb, the geographer Carl Sauer (including Sauer's contribution to *Man's Role in Changing the Face of the Earth*), and the anthropologist Omer Stewart. Hastings listed some of his own scholarship, including one essay published in *Arizona and the West*, a history journal, and others in the *Journal of the Arizona Academy of Science*. Hastings credited the scientist James E. McDonald "for the initial idea, and for the early historical research." He also thanked A. Richard Kassander, director of the Institute for Atmospheric Physics, and Russell C. Ewing, chair of the History Department, for their help "in devising a suitable graduate study program out of the diverse materials of history, climatology and ecology, and steering the program through to completion." True to the natural history tradition, Hastings resisted the urge to attribute environmental change to either human or non-human "natural" factors. Rather, he took pains to point out the complexity and interdependency of causes. Hastings soon moved his dissertation to the next scholarly level when, in 1965, in collaboration with U.S. Geological Survey scientist Raymond Turner, he published *The Changing Mile: An Ecological Study of Vegetation Change with Time in the Lower Mile of an Arid and Semiarid Region*.<sup>26</sup>

Much as natural history persisted in academic scholarship, so did it continue, however diminished, in the thought and policies of NPS. Echoes of George Wright could be discerned, perhaps most importantly, in the famous Leopold Report of 1963. Referring to primary documents such as the diaries of gold rush miners, the Leopold Report took a historical perspective by observing that although environmental changes precluded returning park landscapes to their exact original condition at the moment of European contact, NPS might manage them to give visitors a feel for what they might have been like at that time. The goal

should be to present “a vignette of primitive America,” a “reasonable illusion of primitive America.”<sup>227</sup>

A related document on research in the national parks, authored by a National Academy of Sciences and National Research Council team that included natural history stalwarts Frank Fraser Darling and Marston Bates, and submitted in 1963, called on NPS to make “natural history” the basis of the agency’s research program. “Each national park was established because of the potential esthetic, educational, and scientific and cultural values of its natural history and/or its human history.... Inventory and mapping of the natural history resources of each park should be made.... A permanent, independent, and identifiable research unit should be established within the National Park Service to conduct and supervise research in natural history in the national parks....”<sup>228</sup>

The Leopold Report and the National Academy of Sciences–National Research Council document revealed much about natural history and its problematic place in the national parks. Much as NPS did not pay for George Wright’s research, it also did not pay for, or give much support to, the production of the Leopold Report. Congress funded the work, and non-NPS natural resource experts wrote it. Furthermore, the document authored by Darling and Bates et al., another non-NPS group, manifested an important shift in the meaning of natural history, in and out of the national parks. The document gave natural history a prominent place among its proposals and mentioned the term at least 14 times, but it also made clear that natural history was more the purview of science than of the humanities. It referred to “science,” “scientific,” “scientist,” and the like at least 16 times, and it called for the creation of a key administrative position: chief scientist of the National Park Service. In contrast, the authors referred to “history,” “archaeology,” and “culture” only five times. Clearly, the human history in natural history was an afterthought.<sup>29</sup> The advisory bodies to NPS seemed to be thinking less in terms of history *per se* than in terms of science and the maintenance of ecological purity in the parks, understandable in light of the resource degradation in the parks in the face of massive population growth, industrialization, and vastly increased visitation. But the trend was evident: human history mattered less in NPS’s natural history equation.

As the proponents of natural history kept its narrowed vestige alive while calling for its revival, opportunities arose for historians to reshape it in a new, up-dated form: environmental history. Historians like Samuel Hays, Elmo Richardson, and Roderick Nash, and the political scientist-cum-historian John Ise, had sustained an interest in the national parks, but their works had tended toward intellectual, cultural, policy, and economic history. By the 1970s, however, a group of younger historians, expressing the concerns of the environmental movement, began to adapt natural history, ecology, and geography to conventional historical scholarship in the study of environmental change in specific landscapes. The connection to past natural history scholars like George Perkins Marsh suddenly was strengthened.

An outstanding example of the new generation was my graduate school adviser, Richard White, who completed his doctorate in 1975 at the University of Washington under the direction of the agricultural and western American historian Vernon Carstensen. When White told Carstensen that he wanted to write a biography for his doctoral thesis, a crucial-



ly important intellectual transfer took place, a transfer that spanned some five decades and that, unbeknownst to White, linked him to the deep history of natural history. An “immensely curious and thoughtful” scholar who “read widely,” Carstensen said that although a biography was possible, White might want to consider a wider array of topics. Toward that end, Carstensen suggested that White read none other than Herbert Guthrie-Smith’s *Tutira: The Story of a New Zealand Sheep Station*. Guthrie-Smith’s book became the model for White’s dissertation, an “environmental history” (White’s words) of Whidbey and Camano Islands in Washington’s Puget Sound.<sup>30</sup>

Published in 1980 as *Land Use, Environment, and Social Change: The Shaping of Island County, Washington*, it became one of the foundational texts of the modern field of environmental history. White’s research involved field observations of the island landscapes, his methodology borrowed heavily (and naively, he later thought) from ecosystem science, and his bibliography cited not only George Perkins Marsh, but the work of natural historians such as Marston Bates, Andrew Clark, John Curtis, Frank Fraser Darling, James Malin, and Carl Sauer, all of whom had contributed to *Man’s Role in Changing the Face of the Earth*. White’s paraphrase of Darling harkened back to an older natural history while calling on a current generation of historians to participate in the interdisciplinary study of the biophysical world: “Frank Fraser Darling, a leading ecologist, has called social history, political history, and natural history the three horses pulling the chariot of the study of human sociology and its relationship with the natural world. But historians have been reluctant to acknowledge their horses, much less harness them.”<sup>31</sup>

As much as White owed to natural history, in important ways his work marked a major departure in its lineage. As a historian in the 1970s, White’s work showed the influence, not only of more conventional political, policy, economic, and frontier histories, but also of the new social history, which was much more concerned with the lives and experiences of ordinary people—farmers, laborers, families, American Indians, and the like. Much more than did an older generation of natural historians, White took seriously the role of Indians and Chinese laborers in shaping the islands. White also placed much greater emphasis on the social systems, in particular capitalism, which he thought accounted for the degradation of island ecology. He also attended, not just to the environmental changes that people caused, but to the stories that influenced their actions and that they used to attach meaning to the changes that they witnessed.

In other ways, in particular his intense curiosity and fierce devotion to independent, interdisciplinary research into the causes of environmental and social change, White remained within the natural history lineage. Much as Carstensen served as the conduit for an older body of natural history work, White similarly passed on that knowledge to his students, and he added new work in geography and ecology to the reading lists of his graduate seminars and tutorials. While working on my own doctoral dissertation, White handed me a copy of *Land and Life* (1963), a compilation of writings by the geographer Carl Sauer. White had underlined key passages in the text and written comments in the margins. In “Foreword to Historical Geography,” he underscored a comment indicative of Sauer’s refusal to be captured by disciplinary convention: “When a subject is ruled, not by inquisitiveness, but by definitions of its boundaries, it is likely to face extinction. This way lies the death of learn-

ing.” A heavy black vertical line and words handwritten in the margin indicated White’s emphatic agreement: “Good”—“use this.”<sup>32</sup>

Other historians joined White in the wide-open, interdisciplinary effort that marked the formal inception of environmental history. In 1984, for example, Donald Worster, author of works on the history of ecology and the Dust Bowl, published “History as Natural History: An Essay on Theory and Method,” which harkened back to an older tradition while pointing forward to a new kind of scholarship. “Evolution and history remain, after a hundred years,” Worster wrote, “separate realms of discourse,” and he called on historians to overcome the disciplinary fragmentation that had relegated their craft to “an archival pursuit” with “less and less dirt on it.” He pointed to anthropology as the model of a discipline that had engaged the ecological sciences, and said that an “ecological perspective” might “open our imaginations and let us look deeper into the past around us.”<sup>33</sup>

Even as modern environmental history took shape in the work of scholars such as White and Worster, the older natural history emphasis remained alive among academic scientists who recognized its value. My Colorado State University colleague David Cooper inherited it from his doctoral adviser, John Marr, a plant ecologist and student of William Skinner Cooper who founded the Institute of Arctic and Alpine Research (INSTAAR) in 1951 at the University of Colorado at Boulder. Marr encouraged his students to think broadly, observe closely, and take into consideration all influences on the ecological conditions under study. He emphasized the importance of field observation and taught a method in which he took students to research sites and asked them a historical question: What particular events accounted for the differences in the vegetation patterns in the same area? One of his many protégés was Bettie Willard. The daughter of a landscape photographer and painter who fostered her interest in nature, Willard built on her graduate training under Marr to study the impact of visitors on the alpine vegetation of Rocky Mountain National Park. Marr also transferred to students his knowledge of natural history scholarship. It was in one of his undergraduate ecology classes during the 1970s that David Cooper first read “The Recent History of Glacier Bay, Alaska” and other writings of William Skinner Cooper.<sup>34</sup>

From these intellectual influences, Cooper began to fashion a scientific career rooted in natural history and connected to the national parks. Prompted by his historical imagination, he went to the remote interior of Alaska to see a landscape that might give him an impression of undeveloped nature before the time of industrialization. In the summer of 1977, he spent 36 days backpacking and rafting by himself in Alaska’s Central Brooks Range, an area that within two years became Gates of the Arctic National Monument, and to which he later returned to conduct field research for his doctoral dissertation. Even before completing that work, with the encouragement of John Marr, his adviser, he did something that tied him to the humanistic side of natural history as exemplified by writers such as John Muir, Robert Marshall, Lois Crisler, and Margaret Murie: in 1982, he authored *Brooks Range Passage*, an account of his solo journey five years before.<sup>35</sup> And although his dissertation, “Arctic–Alpine Ecosystems of the Arrigetch Creek Valley, Central Brooks Range, Alaska” (1983), did not draw directly on Skinner Cooper’s work, it did reflect Cooper’s interest in “the scale of landscape change and process” that became the basis of his scientific work in national parks and other places.<sup>36</sup>

Cooper's nearly three decades of research in national parks like Gates of the Arctic, Yosemite, and Rocky Mountain highlighted some of the reasons why natural history remained important to the National Park Service even as it was falling out of favor among academicians interested in turning ecology into a hard science. NPS personnel had legal and administrative mandates to manage *specific* park landscapes. Understanding abstract ecological processes was important to park personnel, Cooper believed, but was secondary to the "synthetic scientific knowledge" that they needed to help them make "informed management decisions" about the places for which they were responsible. That knowledge, moreover, necessarily had to include evidence of "historic processes and connections and how they affected park landscapes and their sustainability." Over the years, Cooper appreciated more and more the necessity of understanding landscape history and the human role in it: trapping, burning, spraying, grazing, irrigating, and many other activities left marks on park landscapes still evident a century and more later. "What's the history of this place?" he thought, should be the first question asked in a research project, not the last.<sup>37</sup>

Although Cooper was surprised that many scientists, including some who worked in the parks, didn't grasp the significance of the question, there were many others like him who did. Again, perhaps one example might suffice to show the persistence of natural history in the parks and its convergence with the more recent field of environmental history. In 1998, two NPS scientists, Mary Meagher and Douglas Houston, published *Yellowstone and the Biology of Time: Photographs across a Century*, a work inspired by specific management problems (fire, grazing, visitation pressure, and the like) and, in its use of primary sources and repeat photography, much in the mold of Hastings' and Turner's *The Changing Mile*. Of the two authors, Meagher most seemed to fit the model of the natural historian. She had begun her career at Yellowstone as a museum curator, a position in which she learned to appreciate "the biological information to be gleaned from the early years of park history" and in particular from the park's collection of historic photographs. "Her interest in what is now the field of environmental history," furthermore, "intensified during her studies of bison because of the need for information on vegetation trends for their winter ranges." Not only did Meagher and Houston cite the work of historians, but their bibliography also included titles—"Rangeland through Time," "Historical Perspective on the Yellowstone Fires of 1988," "A History of Fish Stocking Activities in Yellowstone National Park"—that revealed how much national park scientists had tried to think historically about their subject matter.<sup>38</sup>

While scientists such as Cooper, Meagher, and Houston used history as an analytical tool, other NPS personnel did their part to sustain a link to an older natural history tradition and to bring to the fore the perspective of environmental history. The institutional and disciplinary obstacles they faced should not be minimized. NPS remained primarily devoted to tourism. As a consequence, the agency stressed the importance of landscape architecture as a tool for managing park landscapes and accommodating visitors. The conventional organizational divide between nature and culture—between natural resources management and cultural resources management—also constrained interdisciplinary work, as did the dominance of natural resource managers in large parks conventionally considered to be primarily natural. Nonetheless, in contrast to other federal land management agencies, NPS remained extraordinarily diverse in the disciplinary training of its personnel, and this helped keep

open opportunities for the revival of natural history and the fostering of the “new” environmental history.

Indeed, the range of NPS expertise strongly resembled that of the liberal arts and natural sciences typical of a college or university. NPS interpreters, for example, synthesized knowledge from history, philosophy, art, and the social and natural sciences, and organized it in presentations that, ideally, provoked the imaginations of non-specialist park visitors. The writer and unofficial NPS philosopher Freeman Tilden described interpretation’s holism in *Interpreting Our Heritage* (1957), a manual that drew on the thought of Ralph Waldo Emerson, one of Alexander von Humboldt’s American disciples. “Interpretation is an art,” Tilden wrote, “which combines many arts, whether the materials presented are scientific, historical or architectural. . . . Interpretation should aim to present a whole rather than a part, and must address itself to the whole man rather than any phase.”<sup>39</sup> Archaeologists, cultural anthropologists, geographers, and landscape architects also brought distinctive but complementary perspectives to the problem of landscape change and the human role in it. The college-like gathering of disciplines within NPS did not ensure that historians, scientists, and other personnel would collaborate, but organizational relationships and spatial proximity certainly made it possible. In turn, that intellectual cross-fertilization helped to create opportunities for historians, scientists, and other experts to come together under the new rubric of environmental history.<sup>40</sup>

An important development in this regard occurred in the 1980s and 1990s, when NPS began to pay greater attention to parks primarily devoted to human activities and history.<sup>41</sup> These “cultural landscapes”—Civil War battlefields and agricultural settlements, for example—often contained non-human components, such as forests, prairies, soils, watersheds, and wildlife. Landscape architects worked with historians to develop the “cultural landscape study,” an analysis of the distribution, condition, and history of human landscape features in relation to the non-human natural fundament. Trained to assess relationships between human and non-human forms and processes, landscape architects had been important to the national parks going back to Frederick Law Olmsted in the nineteenth century.<sup>42</sup> Their perspective opened them to the possibilities of environmental history, and they incorporated the field’s insights into their study of places like Ebey’s Landing National Historical Reserve, a rural landscape of some 19,000 acres on Whidbey Island in Washington State’s Puget Sound. A “vernacular landscape” that embodied patterns of settlement ranging from that of coastal Salish Indians to modern tourists, Ebey’s Landing “illustrates,” NPS stated, “a continuous history of human interaction with the environment.” A key text that informed NPS study of the site was Richard White’s *Land Use, Environment, and Social Change: The Shaping of Island County, Washington*.<sup>43</sup>

While landscape architects applied environmental history to cultural landscape studies, historians and other agency personnel developed the field and introduced their colleagues in science and natural resource management to it. Some of this work grew from first-hand experience in the national parks. At the Grand Canyon during the 1970s, Stephen Pyne, a young NPS firefighter with an academic background in literature and geology, began to think about the combined human and non-human history of fire. Over some 30 years, he produced an astonishing range of fire histories that he called “the cycle of fire.” In turn, Pyne and other

scholars influenced new generations of environmental historians. One of the most prolific and influential was Hal Rothman, who, along with his colleagues and students, produced a plethora of national park studies. *Blazing Heritage: A History of Wildland Fire in the National Parks* (2007), his last major work published during his lifetime, built on Pyne's efforts.<sup>44</sup> Other environmental historians provoked controversy. William Cronon and his students, for example, called into question the cultural premises of wilderness and their application to protected areas such as the national parks. In "The Riddle of the Apostle Islands: How Do You Manage a Wilderness Full of Human Stories?" (2003), Cronon criticized the general predilection of the NPS not to interpret the human presence in wildlands, but praised Bob Krumenaker, the park's superintendent, "as both visionary and eloquent in refusing to choose wilderness over history—or history over wilderness."<sup>45</sup>

Environmental history also entered NPS along fortuitous administrative lines. In the mid-1990s, NPS historian Bob Spude was deputy of the Office of Ecosystem Management for the Rocky Mountain Region, a seemingly unlikely assignment for a historian. As part of a project to assess natural resource issues at Great Sand Dunes National Monument, Spude proposed an environmental history. In consultation with Superintendent Bill Wellman and NPS hydrologist Mark Chatman, he prepared a briefing paper, "What is Environmental History? And What Are Its Uses for Land Managers?" The document listed a range of research questions about the history of vegetation, fire, and other land uses, and changes in hydrology and wetlands at Great Sand Dunes. Running through each of those questions was the deeper issue of the extent to which human influences on the landscape could be disentangled from non-human ones. Spude then revised the paper into a plan according to which Michael Geary, a history graduate student at Colorado State University, prepared an environmental history of the monument. Geary first worked with National Biological Service scientists Cliff Martinka and Peter Rowlands on a rephotographic survey of monument landscapes, and then he conducted additional research and wrote the environmental history. My Colorado State University colleague John Albright (a retired NPS historian) and I supervised his work.<sup>46</sup>

Spude's briefing paper made ample references to Richard White and other academic environmental historians, but he also cited the work of NPS historian Richard West Sellars. At that time, Sellars was writing a history that would be critical of NPS scientific research and natural resource policies. Published in 1997 as *Preserving Nature in the National Parks*, the book engendered considerable debate and discussion in and outside of NPS and stimulated support for the Natural Resource Challenge, a program funded by Congress and intended to reinvigorate scientific research in the national parks.<sup>47</sup>

In attempting to reinvigorate science, however, the Natural Resource Challenge also opened opportunities for additional research in environmental history. Some NPS scientists had little or no connection to the older natural history tradition, and they were intrigued with the possibilities that they saw in environmental history. One was Rob Bennetts, an ecologist working for the NPS Southern Plains Area Network and stationed at New Mexico Highlands University. Bennetts had earned a PhD in wildlife ecology at the University of Florida and had worked for various state and federal agencies before transferring to NPS in 2002. Like

other people in his field, he had become disenchanted with reductive, statistically driven methodologies. Too many scientists had become “lost in the numbers” and discounted qualitative evidence gathered from field observation. Working at national park historic sites, however, sensitized Bennetts to the ways that “historical context, not just ecological process,” explained what he saw on the land.<sup>48</sup>

Then, in 2008, Bennetts read an environmental history of Sand Creek Massacre National Historic Site. Such an approach, he thought, might help NPS see and manage its landscapes more holistically, overcoming reductive methodologies and bureaucratic divisions that separated nature and culture. That year, working with Superintendent Kathy Billings, he began to arrange an environmental history project at Pecos National Historical Park, a site that combines a unique collection of cultural landscapes within some 6,670 acres of grassland and pinyon-juniper forest at the headwaters of the Pecos River. An environmental history of Pecos, he believed, might provide a means to bridge various disciplines and agency responsibilities and lay the basis for a more integrated approach to resource planning and management.<sup>49</sup>

By the time Bennetts was delving into environmental history, NPS personnel and their academic partners elsewhere in the nation were adapting it to research, planning, and management. NPS was hiring environmental historians and putting them to work on the parks’ many problems. Through the Cooperative Ecosystems Studies Units program and other means, NPS was involving academic environmental historians in the production of knowledge important to park management, which is how I became involved in the parks, and which is how I met Bob Spude, Ben Bobowski, David Cooper, Rob Bennetts, and other national park personnel and researchers.

In effect, natural history was coming full circle in NPS. Academic divisions, methodological reductions, and bureaucratic compartmentalization were weakening in the face of problems that required resource managers and their partners to think as broadly, flexibly, and historically as possible. The need to understand changing environmental conditions in specific park landscapes oriented field scientists like David Cooper more than ever to history, and some, like Mary Meagher, went into the archives. Meanwhile, environmental problems awakened historians to the importance of nature and compelled them to head outdoors in search of evidence on the land. Richard White recalled that his doctoral research “involved at least as much time feeling out the seasonal changes and the textures of the coasts, fields, and forests of Whidbey Island as it did time in the archives and library.”<sup>50</sup> To a scientist like Rob Bennetts or a historian like me, this convergence could seem new, but in many ways it was a revival of a method that harkened back to the time of Humboldt and Darwin and probably before.

The new synthesis, now called environmental history, is not exactly the same as the older natural history. As practiced by academic historians, environmental history has features that distinguish it from its roots and make it unlike natural science. Although scientists rightly look to environmental historians for help in understanding land management problems, environmental history is more than an instrumental technique—it is more than just another tool in the scientist’s and resource manager’s toolbox. The influence of social history on

environmental history is more profound than historians of these fields probably realize, and it has made environmental historians as concerned with the human communities in the land as with the land itself.

Here it is worth recalling George Wright and *Fauna no. 1*. Evidently there is no reason to believe that Wright was anything but a deeply humane and sensitive man. Seeking information about Yosemite's wildlife, Wright and Ben Thompson went to Maria Lebrado, an elderly Native woman, and spoke to her in Spanish. A photograph of Wright and Lebrado, only a portion of which appeared in *Fauna no. 1*, shows the young man listening intently as the elder Lebrado, forefinger upraised, makes a point.<sup>51</sup> Yet Wright's primary purpose was not to reconstruct a past in which the lives of Yosemite's human and non-human inhabitants were intertwined and in which the fate of wildlife was related to European Americans' efforts to remove Native people from the land. Rather, his purpose was to reconstruct a history centered on animals.<sup>52</sup> The scientist's desire to understand flora and fauna and the historian's need to place people in the story makes up a huge portion of the 25% difference that, in the judgment of my colleague David Cooper, separates them.

If national park scientists and historians wish to overcome that 25% and realize the potential of environmental history as a core NPS methodology, they need to think about how to practice their disciplines in more complementary ways. Scientists need to understand that history is not just an instrumental technique, another tool in the toolkit, but a method that of necessity introduces the human element, and not necessarily as a destructive force exogenous to a natural order. As Joseph E. Taylor wrote, "establishing a natural condition is not simply an ecological but a cultural equation. . . . As historians note over and over, every conservation battle has been a struggle over which nature and whose nature would be conserved." Scientists also should consider that the discipline of history requires a deep knowledge of context, the ability to understand the complexities and limitations of documentary evidence, and the skill to convey findings in analytically *and* aesthetically compelling narratives, or "stories."<sup>53</sup>

Historians, for their part, need to develop a renewed respect for the analytical power of science. They ought to think about the ways that their discipline, no less than science, is culture-bound, politicized, and compromised by a colonial past. They need to listen to scientists and tailor their research questions accordingly, and they need to commit themselves to the national parks as deeply as do scientists. They also must try to overcome their disciplinary aversion to working in teams and learn to collaborate as scientists do. For all their fascination with groups as subject matter, historians are the most radical of individualists, and their individualism does not serve their interests or the interests of science and the national parks particularly well. The world is changing, and too much is at stake for historians not to reach out to others whose values they share.

Finally, both scientists and environmental historians should think about how to use their 75% overlap to shrink if not eliminate the remaining 25% that separates them. As the historian John L. Gaddis observed in *The Landscape of History*, historians share with scientists, in particular ecologists, an interest in complexity and a desire to map the multiple, interacting variables that produce change over time.<sup>54</sup> Above all, scientists and historians must think about their shared roots in natural history, and how both groups at heart are Humboldtians

who wish to arrive at that “harmonious existence,” as Evelyn Hutchinson said, “that alone will justify the evolutionary ascendancy of our species.”

As important as it is, the remaining 25% difference is surmountable—or, at least, negotiable, and we need look no further than George Wright and our friends and colleagues to see evidence of this. Ten years ago, David Harmon suggested that Wright “would have been quick to realize that the human presence in natural landscapes is of long standing and has its own value.”<sup>55</sup> Similarly, I see no evidence that David Cooper is unconcerned with social justice or the fate of democracy; quite the contrary. It’s just that his immediate concerns center on NPS’s mandate to preserve the plants and animals in its care. If historians wish that scientists and resource managers would think about people as more than simply a destructive force in the landscape, it is equally fair that historians fulfill the scientists’ and managers’ wish that we help them to rescue and conserve our precious nonhuman natural heritage. In the future, environmental history might become the intellectual ground on which national park researchers—scientists, historians, and others—negotiate and renegotiate their differences as they work toward goals that unify them and that are much more important than the particular ways they see the world. That future, rather than environmental history *per se*, truly will be new.

## Endnotes

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sor Lowenthal for sharing with me his draft manuscript “From Scientism to Humanism: Reuniting Science with the Arts and Humanities,” February 2010. On the matter of disciplinary breadth, I do not deny that biology, geography, and other disciplines are broad and synthetic, but to assert that all disciplines are the same in breadth and capacity for synthesis would be to beg the question of why academic history became the home of environmental history. Perhaps it is enough to conclude that historians asked broad questions, drew on a diversity of sources, and pulled together their findings in compelling narratives that found sizeable audiences. For an example of such a work, see William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983).

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