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Introduction

When and where did the environmental movement begin? Stepping back from the limitations of national history, this book examines the question of environmental origins on a global scale. In the late nineteenth and early twentieth century the most sweeping environmental initiatives emerged under the auspices of British imperialism. As the following study will show, hard-headed environmentalists and legislators found in empire forestry a ready-made model to persuade the public that the reservation of vast areas of the public domain would serve settlers, industrial development, governmental revenue, *and* environmental purposes. Empire forestry resolved the tension between romantic preservationist notions and *laissez-faire* policies. This book traces the international trail of environmentalism from India, under Lord Dalhousie's Forest Charter, to the British colonies in Africa and Australasia where it matured and, finally, to Canada, the United States, and other parts of the globe where environmentalism permanently entered the pantheon of political creeds.

By the First World War a large area of forested land around the globe lay in the public trust, managed by a professional cadre of government foresters. In the British colonies alone the crown had environmentally protected a land mass equal to ten times the size of Great Britain. Concurrently in the United States, after transferring 1 billion acres of public land into private hands in the early and mid 1800s (approximately one-half of the land mass of the continental United States) a change suddenly occurred. Congress authorized the president to set aside forest lands by proclamation and began America's process of environmental protection that would lead eventually to setting aside 15 percent of its land mass for various forms of protection and public use.

By 1928 British foresters managed environmentally every major forest type in the world. By 1936 the British Empire included a quarter of the land surface of the world, and of this, forests constituted one fourth. Fifty separate forest services protected not only trees but also soil, water, and – so foresters believed – the climate of entire continents and regions. Empire forestry triumphantly claimed credit for this achievement and served as an example for much of the reserved

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forest areas outside the British colonies. Out of a total empire of 9,737,660 square miles, Whitehall approved 2,465,530 miles as classified governmental forests, approximately 25 percent of British possessions and 8 percent of the land surface of the world.[1] Add to this the protected areas of the Republic of China and the United States, which consciously mimicked empire forestry, the figure rose to over 10 percent of the land area of the planet. Only the Neolithic and industrial revolutions compared to the impact of this third global revolution in land use.[2]

Imperial forestry experts promoted the very modern-sounding proposition that deforestation led to devastating changes in climate.[3] Forests in India, Australia, New Zealand, Canada, and the far-flung colonial empire in Africa, Latin America, and the West Indies constituted a global environmental laboratory with innovative strategies and new management techniques, watched attentively throughout the world. In India the forest department regulated a timber industry that employed over 5 million people, managing tropical rain forests, mangrove trees, tropical deciduous trees, dessert scrub, temperate broad-leaved woods, various conifer species, and European-like forests that grew on the foothills of the Himalayas. Burma in 1928 had fully one-half of its total area under forest canopy and profitably managed.[4]

In Canada the forest industry employed 244,000 people, the forests stretching in a great emerald belt from the seaboard of Quebec to the islands of British Columbia. In this colossal domain, Douglas fir led the volume of trees, followed by cedar and hemlock. South of Georgian Bay to eastern Quebec lay great reserves of maples, oaks, and hickories.[5] In Australia, though forests covered only 3.3 percent of the land area, empire foresters saved broad-leafed eucalyptus woods composed of several hundred species. In New Zealand the government preserved the kauri forests for soil, water, and climate protection, taxing the proceeds of timber sales to pay for the program. The government supplemented natural forests with commercial plantations, including indigenous conifers. In 1935 the New Zealand forest service managed over 12,000 square miles of state forests and valued a variety of ecological concerns equally with commercial timber extraction.[6]

In South Africa, with a small forested area of less than 4 percent of the land mass, the forest department reforested thousands of square miles with broad-leafed evergreens. In Southern Rhodesia the forest department governed 88,000 square miles of forest, much of it in private hands, and managed 6,000 squares miles of national parks, game reserves, and protected forests. In the colonial empire of the

[1] D. Brandis, and A. Smythies ed., *Report of the Proceedings of the Forest Conference held at Simla, October 1875* (Calcutta, 1876), 48. Opinion differed on whether forests affected the climate of whole continents or were a local effect only. Dietrich Brandis, Inspector General of Forests in India, took the latter view. Roy Robinson, "Forestry in the British Empire," *Journal of the Royal Society of Arts* 84 (1936): 795, 796.

[2] Robinson, "Forestry," 779. Harold Perkin, *The Third Revolution: Professional Elites in the Modern World* (London and New York, 1996), 2–4.

[3] Robinson, "Forestry," 779. [4] ibid., 781. [5] ibid., 782. [6] ibid., 785–789.

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1 Reserved teak forest in Burma. Empire foresters discovered that to preserve teak they had to preserve the whole "household of nature," including hundreds of other plant and tree species. 1914.

West Indies, West Africa, Kenya, and Ceylon, the Colonial Office administered vast areas. Mahogany, greenheart, pencil cedar, satinwood, and ebony supplied a thriving timber business, while gum trees in British Honduras, jelutong in Malaya, and cacao in the Gold Coast all required the maintenance of stable forest conditions for soil, stream flow, and humidity.[7] All this the imperial administrators managed at a profit by designing a "demonstrated use" area for industry and agriculture.[8] By 1928 fifty separate forest departments served the empire, with 1,500 officers, native junior officers in the tens of thousands, and 1,200,000 square miles of revenue-producing forests.[9]

Empire forestry here refers to forestry as practiced in the British colonies and, retrospectively, to forestry practiced from the inception of colonial conservation in 1855.[10] The term *empire forestry* developed at the apogee of British colonial forestry, and originated with the first British Empire forestry conference, which met on July 7, 1920 at the Guildhall, London. The forest services of India and Canada

[7] ibid., 789–793.
[8] Demonstrated use areas included access by the indigenous population for grazing and firewood.
[9] Robinson, "Forestry," 779.
[10] See the opening remarks of the Lord Mayor of London and Lord Lovat, *The British Empire Forestry Conference* (London, 1921), 1, 2.

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initiated the meeting, requesting the British government to sponsor an all-empire forestry conference with delegates from all the forest services of the colonies (concurrent with the empire timber exhibition of 1920) to exchange ideas, coordinate policies, and collectively take stock of low timber supplies after the First World War. From this meeting, held once every four years, grew the Empire Forestry Association, the Imperial Forestry Institute, and the *Empire Forestry Journal*.

But how exactly, in an age of *laissez-faire*, did empire forestry arise? With an official policy of settlement and development, how did such vast areas of land come to be protected? What shift of attitude or belief divorced public opinion from *laissez-faire*? Why did the public embrace governmental intervention and environmentalism? How did public ownership of land come to be celebrated, with a new and barely defined professional corps of government foresters such as Dietrich Brandis and Gifford Pinchot feted as popular heroes?

Among scholars, environmental history has a historiographical canon largely rooted in the American scene. Why? Because environmental history, as distinct from the practice of conservation, essentially arose in the United States. From Frederick Jackson Turner's 1893 *Significance of the Frontier in American History* to Walter Prescott Webb's *The Great Plains* in 1931, and to James Malin's *The Grassland of North America* in 1947, a fascination for epic history of a peculiarly geographical nature developed, one that featured the dichotomy of a civilized people (Americans) invading pristine nature (the West), that pitted nascent consumer culture against raw and unexploited wilderness or, in the case of William Cronon's *Nature's Metropolis*, that pitted belching factories and towering skyscrapers over and against the good red earth, dominating, seducing and defining the Great West.[11]

Environmental scholars have also written an environmental history that was, as Donald Worster says, "born out of moral purpose." It drove the production of scholarship in the field.[12] Since the 1960s certain scholars insisted that environmental history, like a fugitive, was radical and subversive, riding on the horse of the Romantic movement, leaping to the new mount of literary nature-writing and then landing at last on the progressive saddle of Theodore Roosevelt.[13]

[11] Frederick Jackson Turner, "The Significance of the Frontier in American History," *Annual Report of the American Historical Association for 1893* (Washington, DC, 1894); W. Webb, *The Great Plains* (Boston, 1931); J. C. Malin, *The Grassland of North America: Prolegomena to its History* (Gloucester, MA, 1947). For an interesting analysis of the historiography of environmental history in the United States, see Michael Williams, "The Relations of Environmental History and Historical Geography," *Journal of Historical Geography* 20 (1994): 3–21. See also R. White, "American Environmental History: the Development of a New Historical Field," *Pacific Historical Review* 54 (1985): 297–335. William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York, 1991).

[12] Donald Worster, *The Ends of Earth: Perspectives on Modern Environmental History* (New York, 1988), 290.

[13] Samuel Hays, *Conservation and the Gospel of Efficiency: the Progressive Conservation Movement 1890–1920* (New York, 1959); Richard Nash, *Wilderness and the American Mind* (New Haven, 1967). For a review of conservation literature see L. Rakestraw, "Conservation Historiography: an Assessment," *Pacific Historical Review* 41 (1972).

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Marxist scholars add a new home for environmentalism – New Left history – where nature triumphantly shares a "bottom-up" land ethic and where biota and landscape assume moral, if not legal rights.[14]

Currently a problem in the field is that environmental historians find themselves unable to bridge the gap between the intellectual and cultural foundations of environmental inspiration on one hand and the first implementation of forest reservations on the other. As one environmental scholar reasoned, the nature of environmental history must be broader than American history alone and would have to incorporate institutional and economic realities in a global context, a "mutual," not an "unidirectional" history.[15] But a global history of environmentalism in the nineteenth and early twentieth century would engage an unpopular leviathan: empire. Because of the democratic aversion to empire, scholars have been hesitant to notice the imperial origins of environmentalism. Devotion to the idea that environmentalism is a "subversive science," sensitive to democratic aspirations, and opposed to an "imperial science," fed a reluctance to recognize empire as the proximate cause of environmental innovation.

Alice Ingerson, editor of *Forest and Conservation History*, laments how environmental historians often look at the nineteenth century as a "black box" from which to pull out explanations suitable to their point. All too often environmental ideas are summarized without reference to how Victorians related to their natural environment. The attempt by Thomas Lyon to characterize the whole of pre-1945 ecological history is typical: we are informed, unhelpfully, that "The roots of wilderness thought . . . go deep."[16] Likewise the back cover of David Evans' *A History of Nature Conservation in Britain* announces that the book is "the first complete history of the British nature conservation movement."[17] Yet Evans gives scant treatment of any development before 1890 and very little until the Second World War. Evans' "complete history" is not far off the mark because, unfortunately, environmental history of the nineteenth century is practically nonexistent.

Donald Worster, to his credit, initiated a few steps in the right direction. His book, *Nature's Economy*, makes a broad-stroke attempt to separate the moral and political motivations underlying environmental history and to combine scientific, romantic, and mystic notions of nature into an understandable history. However, he urges, along the lines of Theodore Adorno, the separation of "imperial" from "subversive" science in order to oppose transcendent morality and nature against the western (and heartless) empirical tradition. He also clearly separates a supposed democratic and reformist environmentalism from an empirical, capitalistic, and imperial science. This approach contains many flaws, particularly the uncritical

[14] See Richard Nash, *The Rights of Nature: a History of Environmental Ethics* (Madison, 1989).

[15] L. J. Bilsky, ed., *Historical Ecology: Essays on Environment and Social Change* (Port Washington, NY, 1980), 4, 8.

[16] Thomas Lyon, review of *The Idea of Wilderness: from Prehistory to the Age of Ecology* by Max Oeschlaeger, *Forest and Conservation History* 36 (1992): 146.

[17] David Evans, *A History of Nature Conservation in Britain* (London, 1992).

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acceptance of Adorno's thesis that reads into the past an alliance of progressivism and environmentalism. But Worster deserves credit for opening environmental history into a European-wide perspective that incorporates a multilayered inquiry into the history of science, botany, economics, and imperialism.[18]

Imperialism and environmentalism have a shared past that scholars cannot gloss over. Those who think imperialism and western expansion a "good thing," as do conservatives touting parliamentary democracy and western standards of humanism, and those who think imperialism a "bad thing," as do many third world historians and postmodernists, may here agree that environmentalism is police action, inseparable from western conceptions and attitudes. The conservative and the anticolonialist postmodernist may begin with ideological cleavage, like the dual tips of a horseshoe, and yet agree at the arch. The more conventional established left, who assert a radical cleavage between the agent (imperialism) and the effect (environmentalism) offer an unhistorical past. Surely the antiscience science (as Worster dubs ecology) may not function as a challenge to imperialism and established "European male hegemony," as many environmental historians from Worster, Carolyn Merchant, to Richard Grove suppose.[19]

In *Green Imperialism*, Richard Grove also struggles to explain the origins of environmentalism. He rightly identifies environmental ideas emerging from a coterie of professional scientists on the colonial "periphery" of the European empires. Following the utopian, physiocratic, and medical contributions to the history of climate theory, he especially examines the effect of deforestation on Mauritius and St. Helena. His work examines the writing of selected surgeons to indicate that tropical deforestation by 1850 was conceived of as a global problem.

Grove also asserts that climate theory came to the attention of the British through the experience of tropical islands. But while it is true that the British observed climate change on St. Helena and Mauritius, the theory of climate change by deforestation filtered through a very wide variety of sources. Grove particularly misses how observers analyzed the effect of deforestation in the United States and Europe, downplaying in particular the significance of G. P. Marsh's *Man and Nature*, a classic text of environmental theory in the nineteenth century. Grove's dense work all too often merely traces historical instances that appear to resemble "environmentalism." Oddly, environmentalism is never defined. Those nineteenth-century journals that discuss climate theory he leaves largely unexplored. Grove stops the investigation precisely at the point where climate theory began to affect legislation.[20]

But Grove would agree with Thomas Richards in *Imperial Archive* that the drive for knowledge and the penchant to divide and catalogue the world – central

[18] See Donald Worster, *Nature's Economy: a History of Ecological Ideas* (Cambridge, 1995).

[19] Worster and Merchant do not make this argument alone. See Paul Sears' "Ecology – a Subversive Subject," *BioScience* (July 1964): 11–13.

[20] See Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860* (Cambridge, 1995), 1.

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to the environmental project – grew from taking stock of the "inventory" of imperialism.[21] Part of that inventory is the discovery, subjection, demarcation, and effective management of nature. Indian imperial officials inaugurated a modern forestry management system that spread from India to much of the world. This was most likely to happen, not under a democracy where a majority of users – peasants, craftsmen, and traders – could block reform, but under an authoritarian regime where colonial overlords could, for better or worse, impose their control. These environmental innovations, born of empire, mark the first clear boundaries of environmentalism.

This book follows a chronological and geographical order, tracing the birth of environmental practice in British India and following its spread to Australia, New Zealand, Africa, Canada, and then outside the empire to the United States. As Stephen Pyne notes in *Burning Bush: a Fire History of Australia*, most forest department officers in British employ passed Greater India.[22] These same foresters retired to teach at forestry schools in Britain, Europe, the colonies, and the United States – most notably at Cooper's Hill (in Britain), the University of Edinburgh, Cambridge, Oxford, Aberdeen, Bangor, Yale, Sydney, and Toakai (in Cape Town).[23] Read, discussed, and imitated, they not only taught new generations of foresters but commanded the attention of popular magazines and scientific journals.

The years 1855 to 1945 span the birth of Lord Dalhousie's Forest Charter to the end of the Second World War. Most scholars agree that the Second World War marks the shift from a conservationist environmentalism to a modern environmentalism focused on pollution, health, and work safety. One source during the 100-year period from 1855 to 1945 has been indispensable. The *Indian Forester* chronicled the growth of empire forestry and its practice, and has been neglected in environmental history. The first India-wide forestry conference in 1872 commissioned, under the supervision of Baden Powell, a "Forest Magazine" that collected and commissioned information on forestry that could be made "generally interesting . . . not confining it . . . to technical forest matters" only, and published quarterly. This journal, along with government bulletins, special reports, and parliamentary inquiries form the base of my sources.[24]

[21] Thomas Richards, *The Imperial Archive: Knowledge and the Fantasy of Empire* (London, 1993). To understand the relation between the archive and imperialism, see Richard Garnett, "The British Museum Catalogue as the Basis of a Universal Catalogue," *Essays in Librarianship and Bibliography* (London, 1899). A history of the British Museum and its role in politics can be found in Barbara McCrimmon's *Power Politics and Print: the Publication of the British Museum Catalogue, 1881–1900* (Hamden, CN, 1981).

[22] Stephen J. Pyne, *Burning Bush: a Fire History of Australia* (New York, 1991), 260.

[23] *British Empire Forestry Conference* (London, 1921), 23; "The Training of Candidates and Probationers for Appointment as Forest Officers in the Government Service." Report of a committee appointed by the Secretary of State for the Colonies, July 1931, Colonial no. 61, 1931; E. B. Worthington, *Sciences in Africa* (Oxford, 1938), 17.

[24] B. H. Baden Powell and J. C. Macdonell, *Report of the Proceedings of a Conference of Forest Officers Held at Lahore, January 2 and 3, 1872* (Lahore, 1872), 84–85.

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Berthold Ribbentrop and E. P. Stebbing, onetime head of the Indian Forest Department, wrote irreplaceable histories of forestry in India. Both authors cobbled together a series of governmental reports to form books. Both gave detailed observations in a province-by-province narrative that left the reader to imagine an India-wide chronological narrative. The use of their work represents a radical reorganization of their information, in order to piece together an India-wide treatment that is both chronological and issue oriented. Also essential have been the reports of D. E. Hutchins, who as a forester-at-large roamed Australia, Cyprus, Africa, and New Zealand and wrote reports for various governmental bodies. Franklin Hough, America's first forestry agent, Charles Sargent, botanist and popularizer of forestry practice, and Gifford Pinchot, who oversaw the birth of the forestry department in the United States, are the primary sources for the chapter on American environmentalism.

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The great interference

Environmentalist thought before the 1960s revolved around forests and their preservation. For instance, it was only in the 1980s that the journal *Forest and Conservation History* (founded 1957) began broadening the concept of environmental history beyond forest issues alone; the publication is now called the *Journal of Environmental History*.[1] Early advocacy for preservation focused on forest land for a number of reasons. Timber supply and revenue questions always demanded the attention of governments. But climate theories that explained how forest lands affected rainfall, along with soil preservation, water flow, animal life, and the preservation of a variety of forest flora and fauna made forestry the most pressing environmental issue of the late nineteenth and early twentieth centuries.

Empire foresters usually understood the broader implications of their work, and the effect of forestry practice on the environment. In 1872 Baden Powell admonished his officers at the first India-wide forestry conference to "regard the planting and restoration of our divisions as your chief business." "Never," he instructed "consent to work as if the felling of timber was the great work of life, and as if the provision of a few rupees in the Budget under the planting head . . . was all that is needed by way of supplement."[2]

Defined broadly, environmentalism means merely the advocacy of a proper balance between humans and the natural world. Certainly a history of modern environmentalism is a history of the relationship of people with their environment, particularly the history of advocacy and preservation.[3] More specifically, Worster defines environmentalism as

[1] Michael Williams, "The Relations of Environmental History and Historical Geography," *Journal of Historical Geography*, 20 (1994): 3.

[2] Baden Powell and J. C. Macdonell, *Report of the Proceedings of a Conference of Forest Officers Held at Lahore, January 2 and 3, 1872* (Lahore, 1872), 90.

[3] *Merriam-Webster's Collegiate Dictionary* (New York, 1979) defines environmentalism as, "2. Advocacy of the preservation or importance of the natural environment; especially the movement to control pollution." Pollution control, though not unknown to nineteenth-century environmentalists, defines contemporary environmentalism rather than nineteenth-century environmentalists who, though not unaware of pollution of water and air, focused on the more pressing need of preservation.

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a set of environmental ideals demanded by an urban, industrial society. The period from 1860–1915 saw the emergence of these ideals, a body of thought that we can call environmentalism. That man's welfare depends crucially on his physical surroundings was a central premise of the new environmentalism. Another sacred assumption was that it is better for society, through the agency of experts, to design and direct the development of the landscape rather than leave the process in the hands of untrained, self-interested men. Coordinated public planning would end what was viewed as the haphazard and exploitive practices common in the *laissez-faire* approach. A third dictum of the emerging environmentalism, and perhaps the most important, was the belief that science and scientific methods must become the chief foundation on which environmental plans would be built.[4]

Worster equates the conservation movement with environmentalism, asserting as most environmental scholars do that the conservation of forest lands constituted an early phase of environmentalism – even when those lands were set aside only for issues of timber supply and revenue. Only after the Second World War did the focus of the environmental movement shift to pollution and health concerns.[5] Forest history is the history of how humans have related to much of the natural world, and therefore it has played a central role in the history of environmentalism.

The forest remained the primary focus of environmental concern before the Second World War. Forest clearance in northwestern Europe caused widespread concern over fuel supply, timber, climate, and water flow. In the Middle Ages and early modern period northwestern Europe relied more heavily upon wood products than did the Mediterranean region. The invention of the stiff-collar yoke in the tenth century and the accompanying increase of harnessing power (the old cloth and leather yokes had wrapped around the neck of the animal and constricted its windpipe) radically increased the extraction of forest products.

In *L'attelage, le cheval de selle à travers les âges* (1931) Lefebvre des Noëttess argued that the transition to the new yokes took place under the Capetians, and had a direct bearing on man's increased ability to change the natural landscape. Also in this period, northwestern Europeans utilized watermills. While in Italy, Spain, and Greece the lower water levels often meant dry summer seasons that limited the productive powers of mills, in England, France, and Germany the higher water flow guaranteed a year-round supply of energy. The new hydraulic saw and the formula of abundant forests, draft power, and watermills added up to an increased ability to clear forests and utilize timber.[6]

[4] Donald Worster, *American Environmentalism: the Formative Period, 1860–1915* (London, 1973), 2.

[5] See ibid., 85–95; and Robert Gottlieb, *Forcing the Spring: the Transformation of the American Environmental Movement* (Washington, DC, 1993), 8.

[6] Bertrand Gille, "Le moulin à eau," *Techniques et Civilisations* 3 (1954): 1–12. For an introduction to how the English modified the land, see W. G. Hoskins, *The Making of the English Landscape* (Harmondsworth, 1955); W. G. Hoskins and H. R. Finberg, *Common Lands of England and Wales* (London, 1963); H. C. Darby, *An Historical Geography of England Before AD 1800* (Cambridge, 1951); Oliver Rackham, *The History of the Countryside* (London, 1986); Ann Bermingham, *Landscape and Ideology: the English Rustic Tradition, 1740–1860* (Berkeley, 1986). For a Europe-wide context see William A. Watts, "Europe," and Karl-Enst Behre, "The Role of Man in European

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