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The literature of African environmental history: an introduction

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The Literature of African Environmental History: An Introduction

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By

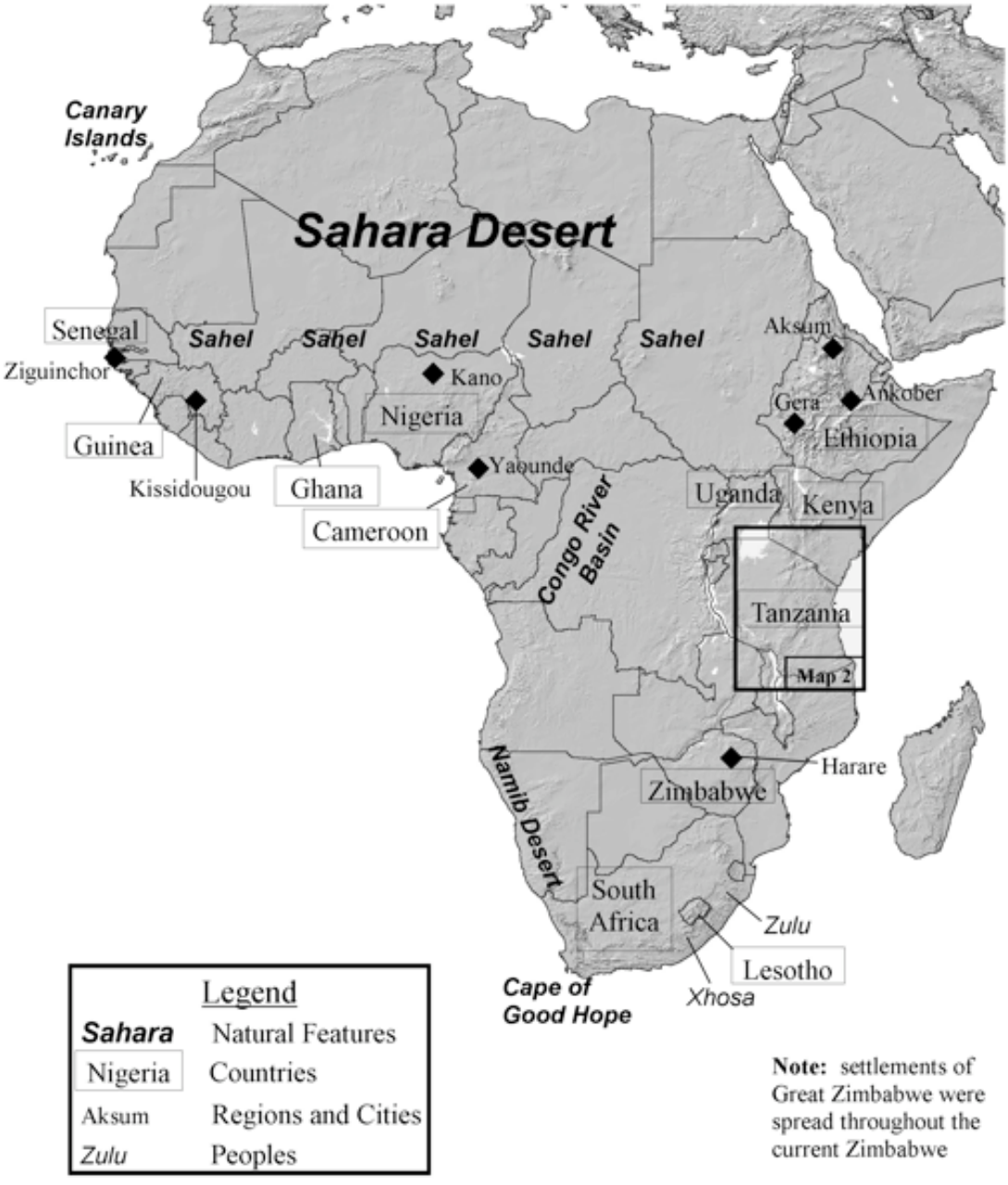
Robert Munson

Introduction

The terms "African environmental history" may conjure up images of herds grazing in the savanna or nomads in the desert. They may bring to mind images from news media stories of environmental disasters, deforestation, infectious disease, or even famine. Each of these images certainly has some basis in reality, but they obscure the complexity of the underlying environmental and cultural processes that are involved in African history. The task of understanding African environmental history must begin not in the popular press but in the library. African environmental history, while a fairly young area of study compared with the discipline's more traditional fields such as American or Western European history, is blessed with a rich and wide range of literature in terms of its geographical and temporal coverage. At one end of the spectrum fall studies explaining how now-vanished societies adapted to and changed their environment, while at the other end are works dealing with current developmental problems set in a historical perspective.

In order to partition this topic into manageable units for discussion, we will begin by asking "what is African environmental history?" From this basis we will focus on nine general themes within the discipline, generally moving from a broad to a narrow focus within each theme. The narrow focus will often train our lens on East Africa and Tanzania in particular, which are among the best-researched areas of Africa and home to some of the first remarkable works of environmental history. In this way, we get a glimpse of how African environmental history has evolved over the last fifty years, and the changing range of questions that researchers continue to pose. This stroll through the literature is necessarily selective and cannot review all important works or research questions. It will, however, serve as an introduction to important elements of African environmental history and provide a springboard for further inquiry.

Map 1: Africa


Canary Islands
Sahara Desert
Senegal
Sahel
Sahel
Sahel
Sahel
Sahel
Aksum
Ziguinchor
Kano
Nigeria
Gera
Ankober
Ethiopia
Guinea
Kissidougou
Ghana
Yaounde
Cameroon
Uganda
Kenya
Congo River Basin
Tanzania
Map 2
Harare
Zimbabwe
Namib Desert
South Africa
Zulu
Lesotho
Xhosa
Cape of Good Hope
Legend
Sahara Natural Features
Nigeria Countries
Aksum Regions and Cities
Zulu Peoples
Note: settlements of Great Zimbabwe were spread throughout the current Zimbabwe

Environmental History—to Africa and then Tanzania

African history and environmental history have grown and matured in the past fifty years, coming together early in their evolution because they are complementary. On one side of the equation, the discipline of environmental history emerged in parallel with the growing concern about the environment. Environmental history—as practiced by those in the humanities and social sciences—grew from several directions and is, in very general terms, the historical study of human interactions with the environment and the varied manifestations of that interaction in human societies. Early works that would now be considered the forerunners of environmental history date to the late nineteenth century, but the modern field goes back to some of the first environmental historians who began examining the American expansion across the continent to the Pacific Ocean. Others looked at the history of the concept of "the wilderness" and the consciousness of environmental harm. Later these investigations evolved into examining the aspects and politics of the environmental movement. The growth in the study of preservation, conservation, and protection policies further added to the discipline. Mart Stewart looked at the field in its broadest dimensions in the short article "Environmental History: Profile of a Developing Field" and discussed its beginnings, practice, and expansion from a few topics of interest into many areas. Stewart concentrates on American historiography, not even mentioning Africa, but does provide a good summary of the major ideas in the field.[1]

Turning from environmental history to African history, we discover that it developed during the same time period and under similar circumstances: historians expanding their horizons. During the late colonial period in the 1950s, academic historians began to spend more time looking at Africa itself, rather than merely as a colonial extension of Europe. The next logical extension was to focus on the characters of history, the Africans themselves and the need to consider African perspectives. Thus, the African people became a valuable and indispensable historical source and their voice, in the form of interviews, began to equal, and in some cases surpass, archival sources in importance. Similarly, historians began to draw on many other disciplines—anthropology, archaeology, and linguistics, to name but a few—to get a broader perspective on areas where few indigenous documents existed. John Edward Philips explains "What is African History?" by examining the discipline and discussing many good examples from Africa in his introductory essay to *Writing African History*.[2]

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[1] Mart A. Stewart, "Environmental History: Profile of a Developing Field," *The History Teacher* 30, 3 (May 1998), 351–68.

[2] John Edward Philips, "What is African History?," in John Edward Philips, ed., *Writing African History* (Rochester, N.Y., 2005), 25–48. The other chapters in the book provide wonderful introductions to the sources of data for writing history (Part II) and perspectives from which historians write (Part III, e.g., social, economic, gender).

Many Africanist historians realized that the close connection of the vast majority of Africans to the land as small farmers was a defining characteristic of the continent. These historians first looked at agrarian history and slowly turned their attention to other related topics, influenced by the discussion within the environmental history of the West. The field of African environmental history grew from this early concentration on agriculture, and never abandoned agrarian studies as an essential component.

African environmental history is thus the study of the interaction of African societies and their physical environment. The emphasis in this discipline remains *history*, with the environment providing an array of important background conditions. The environment is not deterministic; rather, it sets a range of limiting factors to which human societies adapt. The environment influences and contributes to people's actions but is only one of several potential causative factors. Environmental factors are mediated by culture, which includes technology, social structure, ideology, economic activities, and political organization. James McCann provides examples to clarify the historical role of the "natural world" in the third chapter of his book *Green Land, Brown Land, Black Land*. [3] His case studies of the Sahel, Great Zimbabwe, and Aksum illustrate many of the complexities of human-environmental relations that characterize African environmental history.

Several general historical works illustrate the interplay between Africans and their environment. John Iliffe's *Africans: The History of a Continent* looks at the history of this, the oldest inhabited continent, as a history of people battling the environment.[4] In Iliffe's judgment the "natural world" tends to be an impediment to human expansion. Nature, disease, wild animals, geography, etc., contest the expansion of humans across the surface of the continent, and then hinder dense settlement of the land up to and through the colonial period. Other important human factors such as culture, politics, and colonialism accompany Iliffe's examination of the role of the environment. This work is a general reference that presents a good introduction to the subject, and certainly sets the bar high for a continental history.

Focusing more closely on African environmental history itself, we return to James McCann's book *Green Land, Brown Land, Black Land*.[5] This engagingly written work provides a varied introduction to African environmental history. McCann first looks at the framers of nature and history—such as geography, climate, soil—to set history in the physical world. He then provides studies that examine four of Africa's historical landscapes: the desert and human disturbance in the Sahel and savanna; biodiversity, new crops, and human settlement in Ghana; forests and deforestation in Ethiopia; and soil and erosion in

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[3] James McCann, "Environment and History in Africa," in *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800–1990* (Portsmouth, N.H. and Oxford, 1999), 23–51.

[4] John Iliffe, *Africans: The History of a Continent* (Cambridge, UK, 1995).

[5] McCann, *Green Land, Brown Land.*

Lesotho. In these straightforward, detailed narratives, McCann touches upon most of the important themes concerning the environment in Africa and shows that knowledge of history is essential in order to understand the complex environmental issues affecting human societies.

In East Africa, an early and controversial environmental history of Tanzania came from the pen of Helge Kjekshus, one of the first of a long line of renowned Scandinavian scholars of Tanzania. His *Ecology Control and Economic Development in East African History: The Case of Tanganyika 1850–1950* attempted to explain the connection between people, the environment, and colonialism.[6] This work argues that the environment was the economic basis of society and the indigenous people were generally successful in their offensive against a hostile ecological system until about 1890–1900, when a combination of colonial-inspired disasters (Rinderpest, smallpox, famine, sand fleas, warfare) led to an ecological catastrophe and a breakdown of Tanzanian societies and social systems. Much criticism and controversy greeted this work, which for the first time presented a dynamic history from an African perspective. It did, however, spur a great deal of subsequent research and was an important inspiration for the field, so much so that it enjoyed the honor of being republished in 1996.

John Iliffe's *A Modern History of Tanganyika,* published in 1979, is written in a similar vein, although less controversial and more comprehensive.[7] This work preceded Iliffe's continental history noted above, and took advantage of his long experience in Tanzania. The book begins with a consideration of "nature and men" from the earliest times and continues those themes throughout the book—how humans have struggled with natural enemies to colonize the land—while emphasizing the Africans' perspectives. This work spans the precolonial period to Tanganyikan independence (1961) and provides a broad look at the processes of development, colonization, and social change. The backdrop of nature is ubiquitous as a hostile force and an interventionist in the relations among people.

Themes of African Environmental History

The works discussed above are generally syntheses of other studies, cover large geographic areas, and touch on most of the important themes of African environmental history, even if only briefly. However, to understand these themes more completely we must turn our focus to more specific studies, generally those looking at one issue in smaller geographic areas. To

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[6] Helge Kjekshus, *Ecology Control and Economic Development in East African History: The Case of Tanganyika 1850–1950* (Berkeley, Calif., 1977) and 2nd ed. (London, 1996). The second edition is valuable due to Kjekshus's new introduction that discusses developments in the field since the first edition.

[7] John Iliffe, *A Modern History of Tanganyika* (Cambridge, UK, 1979).

follow this prescription we will look at each of the following nine important themes. Together they will illuminate many of the salient issues in African environmental history.

1. Images: How the West "Understands" Africa
2. The Physical World: "Natural Actors" in Environmental History
3. Disease: An Age-Old Plague
4. Warfare: Conflict at its Sharpest
5. Forests: Growth and Deforestation
6. Plants: The Basic Inhabitants
7. Savannas: Agriculture, Pastoralism, and Change
8. Wildlife: From Hunting to Conservation with a Social Face
9. Cities: Urbanization and the Changing Face of Settlement

These themes will leave out a great deal because the literature has grown enormously in the last twenty years. They do, however, present many of the important issues and insights that make African environmental history a significant field of study.

1. Images: How the West "Understands" Africa

We begin our investigation of this subject in the West, close to our own world of consciousness. To understand others, it is imperative first to be able to recognize our own viewpoint and conceptions. In this regard, we should explore some of the ideas, myths, and images of Africa that have developed in Europe and the United States in years past. Many of these ideas framed political decision making during the colonial period, still enjoy currency in Africa among the ruling elite, and populate the backrooms of our popular consciousness today.

During the precolonial era, one set of widespread but contradictory beliefs concerned how Africans lived before the great incursion of European colonialism. Anthony Hopkins, focusing on economic development, examines the competing points of view that saw precolonial Africa as either "Merrie" or "Primitive."[8] Those who believed in the "Merrie Africa" thesis saw precolonial Africa in a very positive light: all was good, the societies

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[8] Anthony G. Hopkins, *An Economic History of West Africa* (New York, 1973). A summary can be found in Chapter 8 (pp. 293ff). Hopkins looked at the terms from an economic point of view, but they have since taken on a more holistic character, including most societal aspects; cf. James Giblin and Gregory Maddox, "Introduction," in Gregory Maddox, James Giblin, and Isaria N. Kimambo, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania*, (London, 1996), 2; and Juhani Koponen, *People and Production in Late Precolonial Tanzanian: History and Structures* (Finnish Society for Development Studies, 1988), 21.

functioned perfectly, and life was grand and wonderful. The coming of the European imperialists destroyed the harmony and introduced previously unknown poverty and suffering. Those who subscribed to the "Primitive Africa" viewpoint, on the other hand, believed that Africans lived in primitive groups with no laws, only emotions and tradition. Africans lived a dreary, disease-filled life, waiting for Europeans to arrive bringing civilization and development. Each of these naïve schools of thought holds some limited truth, but both are too general to be applied to the many different societies and situations throughout Africa.

A similar set of beliefs concerns the postulated unilinear development trajectory of societies. Based very loosely on perceived stages in European history, Europeans assumed that societies develop from hunter-gatherers to pastoralists and, finally, to sedentary agriculturalists. Within the latter stages, development progresses from extensive to intensive land use as populations increase and people develop better farming techniques. This trajectory is simplistic and does not reflect the complexities we see documented in the historical record. Historically, people have tended to make the best use of the land. For example, in the wide, dry expanses of the savanna, pastoralism makes more sense than the "more evolved" practice of settled farming. In other cases, various groups have changed from intensive to extensive agriculture in adaptation to changing environmental conditions.[9]

Complementing these general ideas on African conditions are the more specific theoretical models of human-environment relationships. The first important one is that of Thomas R. Malthus, whose *An Essay on the Principle of Population* established the Malthusian worldview.[10] Simply stated, Malthus argued that population increases geometrically while food production increases arithmetically. Thus, in the long run, a population will outstrip its food supply and the result will be general misery. His argument easily attracted adherents because it was easy to understand and appeared to be playing out in the industrializing Europe of the nineteenth century. Colonial officials and other observers transferred this perspective to Africa, and have used the Malthusian model of population growth outstripping food supply to explain many environmental problems in Africa. In their view, evermore people resort to increasingly more extensive agriculture or intensify agriculture beyond sustainability, and thus eventually destroy their own base of production.

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[9] John Iliffe discusses some of the advantages and disadvantages of the various modes of production and historical evidence for the beginning of food production in various parts of Africa; cf. Iliffe, *Africans*, 12-17. Additionally, Mats Widgren and John Sutton present several case studies that outline a number of reasons why intensive agricultural developed in different areas in East Africa; see Section 7 of this paper. Cf. Mats Widgren and John E.G. Sutton, eds., *Islands of Intensive Agriculture in Eastern Africa* (Athens, Ohio, 2004).

[10] T.R. Malthus, *An Essay on the Principle of Population*. Especially Book I, Chapters 1 and 2, and Book II, Chapter 13. He published the first edition anonymously in 1798 and the sixth and final edition in 1826, continually revising the manuscript.

Ester Boserup presented a direct challenge to Malthus' model in the early 1960s.[11] Boserup criticized Malthus for concentrating on food production alone, and not on other technology or the effects of population increase on the development of technology. She posited that, in general, an increase in population leads to an increase in innovation and improved technology. From this flows adaptive agricultural change and intensification, along with an higher standard of living. In general, Boserup views population growth as a valuable and promising development.

Garrett Hardin's 1968 article "The Tragedy of the Commons" illustrates one very important outgrowth of Malthusian thinking, especially for pastoralists.[12] In this theoretical piece, Hardin explains how the "tragedy of the commons" results from the rational thinking of each herdsman trying to maximize his own gain while using the common grazing areas. In the modern context of disease and pest control, the rational, continual addition of just one more animal leads to eventual overgrazing and declining productivity. That is, rational use leads to overexploitation and ruin, with no apparent technical solution to this Malthusian equation. Hardin concludes that the only solution is mutually agreed upon coercion to stop the irrational commons-of-breeding. Here Hardin describes a very Western view that influenced the thinking of colonial governments across Africa, but he neglects to consider nuances of the African situation. In Africa, common property is not necessarily synonymous with open access, and African societies generally have rules limiting grazing to sustainable levels. Furthermore, Hardin's "carrying capacity" model is based on the western conception of large, well-fed cattle and did not coincide with African values that place worth on greater numbers of thinner cows. Hardin also neglected to consider other types of range management, such as that practiced by the nomadic Maasai.

These various concepts appear again and again in much of the historical literature and many of the historical sources. An informative look at how many of these Western misconceptions have played out in policy making in Africa can be found in Melissa Leach and Robin Mearns's *The Lie of the Land: Challenging Received Wisdom on the African Environment*.[13] In this work, the authors collect nine case studies that examine degradation narratives—usually variants on Malthus' contention—where the close study of history and local perspectives tend to debunk the simple "doom and gloom" narratives found in the popular media. The "received wisdom" contained in these simple narratives remain persistent in the face of countervailing evidence since they are easy to understand and enjoy long term

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[11] Several presentations of Boserup's argument exist in different publications. A brief version can be found in Ester Boserup, "Environment, Population, and Technology in Primitive Societies," in Donald Worster, ed., *The Ends of the Earth: Perspectives on Modern Environmental History* (Cambridge, UK, and New York, 1988), 23–38. She published her first work, *Conditions of Agricultural Growth*, in 1961.

[12] Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (13 Dec. 1968), 1243–48.

[13] Melissa Leach and Robin Mearns, *The Lie of the Land: Challenging Received Wisdom on the African Environment* (Oxford, 1996).

use. The initial chapter of the book is an account of what "received wisdom" is and why it persists, and is quite valuable for understanding many of the above mentioned images and theoretical views.[14] The important themes in this book include the arguments that environmental change is not necessarily degradation, and that farmers and herders intervene in the environment to benefit production as they judge best.

A similar account of Western misconceptions can be found in Jonathan Adams and Thomas McShane's very readable *The Myth of Wild Africa: Conservation without Illusion*. [15] They discuss many of the illusions the West holds about Africa and then juxtapose the myths with the reality in Africa. The authors begin by looking at how the myths developed in the West and then take snapshots of specific issues—hunting, conservation of the Serengeti and Ngorongoro crater, scientific research, local conservation programs such as CAMPFIRE in Zimbabwe, and the Mountain Gorilla Project—and compare the Western view with a view closer to the African reality. Their conclusion focuses on the contention that conservation and development must happen together, a view diametrically opposed to the traditional Western view that these terms are contradictory and irreconcilable.

2. The Physical World: "Natural Actors" in Environmental History

The simple definition of African environmental history presented above—the interaction of African societies and their environment over time—comes with the caveat that not *too much* causal significance should be attributed to the physical world. With this caveat in mind, however, we can look fruitfully at three areas—climate, geography, and fire—in which the close observation of the physical world provides much historical explanatory power. Each of these areas must be approached from a slightly different perspective in order to extract the most important ideas. These ideas not only provide explanations on their own, but also provide important background concepts for other themes in environmental history.

There is as much climatic variability in Africa as in any other continent on earth. From the hot, humid coast of West Africa to the glaciers of Mt. Kilimanjaro, from the scorching, dry Sahara and Namib deserts to the dense rain forests of the Congo River basin, Africa provides examples of most of the earth's major ecosystems. Overall, however, precipitation plays the most important role in the African climate, trumping temperature and other factors. The presence of water—either too much or not enough—provides the climatic backdrop for much of African history. Thus, one important question about climate change that has occupied historians concerns precipitation: how has precipitation changed through time, and how have societies reacted or adapted to those changes?

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[14] Melissa Leach and Robin Mearns, "Environmental Change & Policy: Challenging Received Wisdom in Africa," in Leach and Mearns, eds., *Lie of the Land,* 1–33.

[15] Jonathan S. Adams and Thomas O. McShane, *The Myth of Wild Africa: Conservation without Illusion* (New York, 1992).

Historical meteorologist Sharon E. Nicholson made a good attempt at this when she reconstructed the climatic history of the Sahel in her article "The Methodology of Historical Climate Reconstruction and Its Application to Africa."[16] To compensate for the lack of meteorological data, Nicholson used proxy data from historical, hydrological, and paleoecological sources to reconstruct the climate of the Sahel over the last several hundred years.[17] She concluded from these data that wetter conditions were generally prevalent in the Sahel throughout much of the eighth through thirteenth centuries and then again from the sixteenth through eighteenth centuries, indicating a possible contraction of the desert. In the intervening time, conditions were likely drier with a final trend to the current pattern of aridity beginning in the late eighteenth century. Nicholson's data allowed her to study climatic fluctuations of the mid-nineteenth century and later in greater detail, and to discuss climatic anomalies such as short-term periods of drought rather than only the long term variations in rainfall. Her study provides a starting point for other historians who want to include the effects of changing precipitation on the societies of the Sahara and Sahel.

Using this as a springboard, we can move on to examine how historians have treated the relationship between climate (as an aspect of the environment) and human history. James McCann's "Climate and Causation in African History," provides a very good historiographical introduction to the subject of climate.[18] His survey touches upon many important academic works as well as popular perceptions of climatic themes such as desertification. For example, when looking at desertification in the Sahel, McCann poses the very pertinent question of whether African farmers' settlement patterns are causes of desertification—as commonly supposed—or reactions to it (p. 273).

Two valuable studies use Nicholson's conclusions as a springboard and examine the connection between historical socioeconomic change and environmental change in the Sahel/Sahara of West Africa. George Brooks' *Landlords and Strangers* examines the period from 1000 to 1630 and emphasizes trade and social networks by looking at climatic

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[16] Sharon E. Nicholson, "The Methodology of Historical Climate Reconstruction and Its Application to Africa," *The Journal of African History* 20, 1 (1979), 31–49. Emmanuel Ladurie criticizes historians' methodology of using the supposed *effects* of climate change to make conclusions about *alterations* in the climate. He contends that often these effects, such as planting new crops, can be explained by other factors such as economic transformations**.** He does, however, concentrate on European history. Cf. Emmanuel LeRoy Ladurie, *Times of Feast, Times of Famine: A History of Climate since the Year 1000*, trans. Barbara Bray (Garden City, N.Y., 1971).

[17] Examples of Nicholson's historical sources include travelers' journals, local chronicles, and ships' logs. Her hydrological data looks at things such as historical locations of lakeshores and rivers. Finally, her paleoecological sources include studies of tree rings and pollen samples. Of special value is Nicholson's discussion of the value and inherent weaknesses of the various historical sources she uses.

[18] James McCann, "Climate and Causation in African History," *International Journal of African Historical Studies* 32, 2–3 (1999), 261–79.

fluctuations as the key to history.[19] As the frontiers between the Sahara desert, the savanna, and the forest in West Africa moved north or south as the result of greater or lesser rainfall, so did the inhabitants' activities. These activities were based in part on the retreat of the tsetse fly band that depended upon a minimal amount of moisture. A similar study by James Webb, *Desert Frontier*, looked at a shift in aridity during the shorter period of 1600–1850 as the desert frontier moved 200 to 300 km to the south.[20] Webb argues that this change in the frontier improved the position of the northern pastoral nomads vis-à-vis the settled agriculturalists by allowing them to range farther to the south, and thus altered the regional economy. Both of these studies relate changing precipitation to human activities, illuminating the connections convincingly.

Geography, like climate, is an important component of environmental history, and Jared Diamond's *Guns, Germs and Steel* uses geography as a background to offer interesting insights into the deep, long term history of societies.[21] Diamond makes the case that the roots of Eurasian dominance in the modern world lies in the distant past, i.e., how the environments of Europe and the Middle East differed from those of the rest of the world. For example, part of the reason for Eurasian dominance lies in the availability of large mammal species suitable for domestication—thirteen of the fourteen major domesticated animals are from Eurasia, only the llama was endemic elsewhere. Diamond's use of numerous and varied kinds of evidence sets an example for historians and others who wish to examine the complexities of human-environment relationships. He combines the evidence of anthropology, archaeology, linguistics, sociology, biology, botany, zoology, and other disciplines, but leaves out many of the favorite sources of historians due to the long time period of his study—e.g., written sources and oral testimony. However, for the time periods usually studied by historians—hundreds or even tens of years—Diamond's work merely provides a background. Although Diamond's thought provoking book does make a compelling argument and provides a wonderful example of a (very!) *longue durée* work, it smacks of geographical determinism.

A consideration of biogeography in one of the standard works in environmental history provides a narrower and more historical look at geography. Biogeography is the attempt to explain how, why, and where species are spread across the landscape. Alfred Crosby wrote what was essentially a biogeographic history of the world in his masterpiece

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[19] George E. Brooks, *Landlords and Strangers: Ecology, Society and Trade in Western Africa, 1000–1630* (Boulder, Colo., 1993).

[20] James L.A. Webb, *Desert Frontier: Ecological and Economic Change along the Western Sahel, 1600–1850* (Madison, Wisc., 1995).

[21] Jared Diamond, *Guns, Germs and Steel: A Short History of Everybody for the Last 13,000 Years* (London, 1998).

Ecological Imperialism. [22] He examines the effect of the importation of European animals, plants, and diseases to the newly discovered lands of the Americas and Australia. The most important characters here are not the people, but the domestic animals, weeds, and germs of the Old World. Crosby observes that tropical Africa (other than the Cape in southern Africa) was able to resist the full-scale Europeanization of the landscape that occurred in the Americas and Australia due to its past contact with Europe, its climate, and its resistant biological repertoire. Crosby's study is a basic text within environmental history since it deftly combines a long term perspective with a far-ranging explanation of important changes in the landscape. Even if its direct applicability to African history is limited, Crosby is nevertheless a source of fundamental theory.

The third important natural actor is one of a different kind—the physical reaction of combustion: fire. Throughout history fire has been significant in changing the landscape and as an important tool to keep people warm, cook their food, and help them clear the land. Stephen Pyne looks at environmental history from the perspective of fire complementing the role of people. His work *Vestal Fire* tells an environmental history of "Europe and Europe's Encounter with the World." [23] While he does not directly deal with Africa at any length, the European background is critical to understanding the colonial and postcolonial approaches to fire in Africa by placing it in its cultural context. In *World Fire*, Pyne briefly focuses on Africa by looking at the cultural as well as the *natural* setting of fire on the veld of South Africa.[24] Pyne writes "The African biota has not evolved with fire per se but with anthropogenic fire, and fire has here—more than elsewhere, and for a far longer time—mediated between humans and the natural world" (p. 46). Here fire is a source of natural biodiversity and Pyne explains how the composition of bushland has changed over recent years due to the elimination of fires. In this way, he makes the case for the reimplementation of burning to restore the natural balance. Pyne's emphasis on fire as an actor in concert with humans focuses the historian on the many aspects of fire, and away from the Western conception that fire is always a destructive force on the landscape.

When we look at environmental history from the perspectives of these three "natural actors" we can better understand and appreciate the environmental setting in which societies have developed over time. We also have a greater variety of perspectives from which to contemplate the effects of the natural world on human life and societies in Africa. Our stroll

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[22] Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (Cambridge, UK, 1986); see e.g., Chapter 11, "Explanations."

[23] Stephen J. Pyne, *Vestal Fire: An Environmental History, Told through Fire, of Europe and Europe's Encounter with the World* (Seattle, Wash., and London, 1997).

[24] Stephen J. Pyne, "Veld Fire (South Africa)" in *World Fire: The Culture of Fire on Earth* (Seattle, Wash., and London, 1997).

through African environmental history now brings us to some of the more straightforward topics, those that deal with the direct relations of African people and their environment.

3. Disease: An Age-Old Plague

Africa possesses a rich and diverse disease repertoire due to its long history, its large number of diverse ecosystems, and proximity to large human concentrations in Asia and Europe. While many see the history of Africa as one in which people succumb to disease, a more interesting story is how people developed systems to protect themselves and their animals from disease without modern pesticides or medicinal technology, shaping the precolonial landscape.

John Ford provided the springboard idea concerning the environmental history of disease in Africa in is groundbreaking work, *The Role of the Trypanosomiasis in African Ecology*. Ford deals at length with the single issue of this disease, which is spread by tsetse flies and affects both humans and various species of domesticated and wild animals.[25] Ford examines five case studies, three centered on Lake Victoria in Tanzania and Uganda, and two at the limits of tsetse range—the northern limit in Nigeria and the southern limit in the former Rhodesia (now Zimbabwe). He describes how African societies managed the danger of trypanosomiasis in their domestic animals (primarily cattle) by a combination of acquired partial immunity through controlled exposure and a rearrangement of the environment through controlling the vegetation and thus isolating hosts from vectors. Ford was an entomologist looking at history and felt that scientists, in general, failed to understand the historical and cultural context of disease and thus could not present effective responses to problems; his attempt with this work was to rectify this disconnect. To Ford the real problem in trypanosomiasis was not how it could be cured or eliminated, but rather how it could be controlled, given the means available, to avoid economic ruin. John Ford set the stage for the study of disease in African environmental history by providing insights not readily apparent to historians or scientists in the field.

Using Ford's insights, later historians expanded on his study in different directions to add important depth to other important historical issues. Helge Kjekshus, in the previously mentioned *Ecology Control and Economic Development in East African History*, used Ford's ideas as a foundational explanation for precolonial stability in Tanzania.[26] Both George Brooks' *Landlords and Strangers* and James Webb's *Desert Frontier* take into account the belts of tsetse fly infestation moving north and south to help describe human actions.[27]

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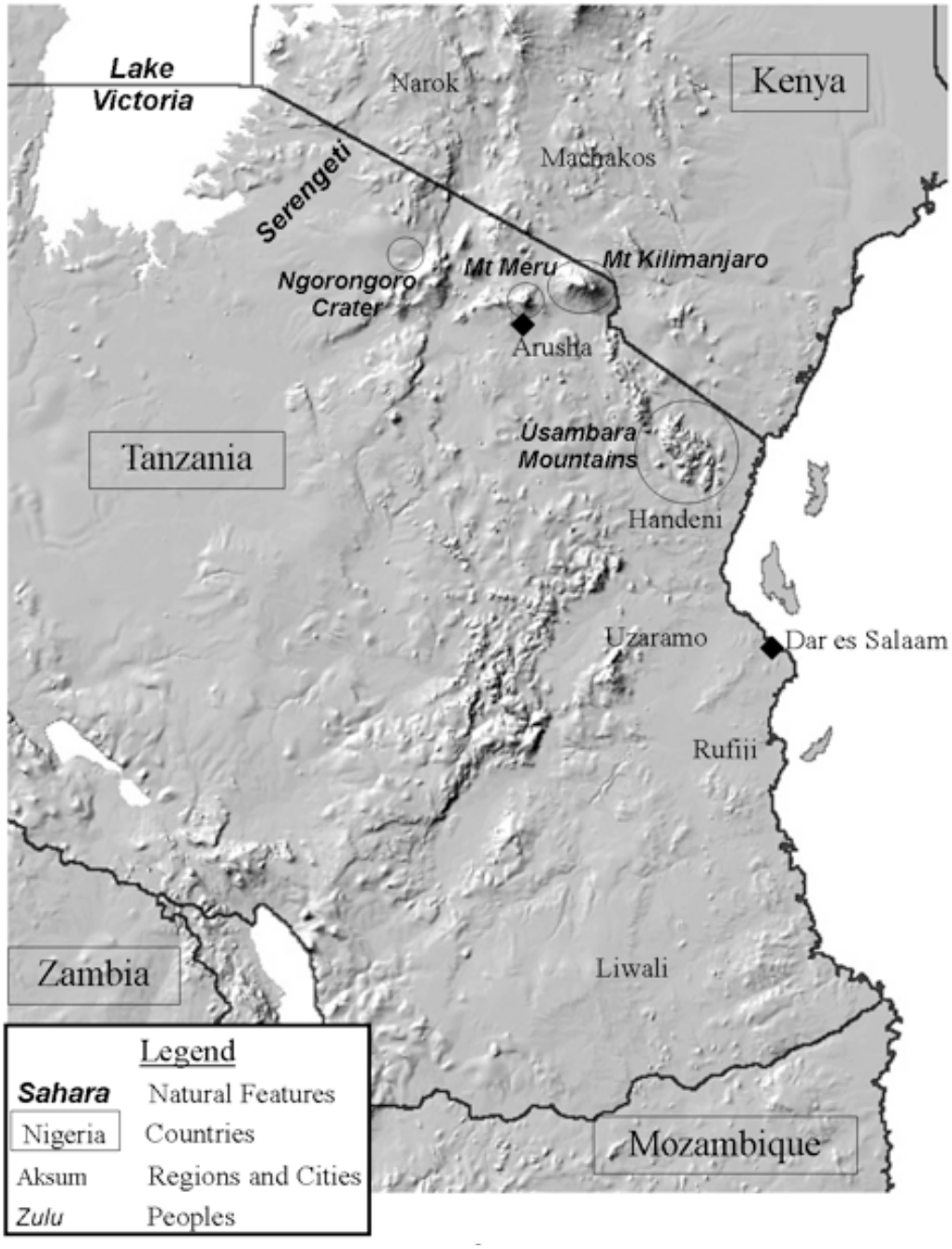
[25] John Ford, *The Role of the Trypanosomiasis in African Ecology* (Oxford, 1971).

[26] Kjekshus, *Ecology Control.*

[27] Brooks, *Landlords and Strangers*; Webb, *Desert Frontier*.

Map 2: Tanzania and southern Kenya



Richard Waller wanted to investigate Ford's causal relationships and took as his study area a portion of Kenya's Maasailand in his "Tsetse Fly in Western Narok, Kenya."[28] In Narok before 1891 the tsetse fly and thus trypanosomiasis were restricted to pockets as a result of Maasai environmental control through grazing their cattle and frequent movement. The Rinderpest epidemic in 1891, and parallel manifestations of civil war and depopulation, allowed tsetse to expand as game recovered, providing a feeding source, while the decreased numbers of Maasai could not control the landscape. Drought and locust visitations reinforced the spread in the late-1920s, before a counterattack began in the mid-1950s through bush clearance and the expansion of cattle grazing. Waller's study shows how the Maasai had controlled the tsetse, and thus the trypanosomiasis danger through environment management and limited exposure, upholding Ford's conclusions.

A second article applies Ford's insights to a different disease. James Giblin's "East Coast Fever in Socio-Historical Context: A Case Study from Tanzania" gives a fascinating account of how Africans in Handeni District (the Zigua people) of northeastern Tanzania had developed a complex land management system to protect their cattle from East Coast Fever.[29] The precolonial Zigua successfully controlled the land, the wildlife, the presence of ticks and thus the danger of East Coast Fever in concentric circles of management increasing in intensity closer to their settlements. Giblin relates how this system fell apart under the stresses of colonialism. The danger of East Coast Fever was partly controlled through the early postcolonial period with the application of chemicals, but the lack of funds eventually led to the demise of this solution after Tanzanian independence.

Later, James Giblin added to John Ford's thesis in his book length manuscript *The Politics of Environmental Control in Northeastern Tanzania, 1840–1940*.[30] In this work he connects politics with environment management in Handeni District between 1840 and 1940. Historically in Handeni, environmental stability was maintained by patron-client relations, where patrons would employ clients' labor to control the landscape's vegetation and produce surplus food for times of scarcity. In turn, the patrons redistributed resources to their clients in times of hunger. This mutual responsibility kept people working on the land during periods of drought, and thus control could continue. This "golden age" of agriculture was interrupted by German colonialism after 1890. The Germans encouraged farmers to produce

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[28] Richard D. Waller, "Tsetse Fly in Western Narok, Kenya," *Journal of African History* 31 (1990), 81–101.

[29] James L. Giblin "East Coast Fever in Socio-Historical Context: A Case Study from Tanzania," *International Journal of African Historical Studies* 23, 3 (1990), 401–21.

[30] James L. Giblin, *The Politics of Environmental Control in Northeastern Tanzania, 1840–1940* (Philadelphia, 1992). A more compact version of the argument can be found in James L. Giblin, "The Precolonial Politics of Disease Control in the Lowlands of Northeastern Tanzania," in Maddox, Giblin, and Kimambo, eds., *Custodians of the Land*, 127–51.

independently for colonial markets, thereby disrupting the traditional patronage networks. Thus, the patrons no longer had responsibility to their clients during times of scarcity and the people tended to migrate during these times of need in search of work or other assistance. Agriculture and control of the land was disrupted (the control of vegetation, burning and the clearing cycle) encouraging the outbreak of human and cattle disease. In this work, Giblin shows how politics can be one of the factors helping to control disease.

4. Warfare: Conflict at Its Sharpest

The fourth theme focuses on warfare and how it helped to shape human settlement, interaction, and the landscape in Africa. Competition between groups for access to resources—whether land, ivory, or others—or the attempt by one group to assert its dominance resulted in war when societies could not negotiate and settle their problems peacefully. The effects of war on the environment generally have been neglected by environmental historians, and have been left to experts in one of the older historical fields—military history. This neglect meant that questions important to environmental historians, especially the effects of war on the landscape, often went unanswered.

Looking at Alfred Crosby's aforementioned *Ecological Imperialism* from a different perspective, we see a military history in its full complexity.[31] Crosby illustrates how the militaries of the European powers set foot in the New World (primarily in the temperate regions of North America, southern South America and Australia) and began their military conquests accompanied and assisted by the other arms of society; e.g., commerce, but also by the advances of the natural world—diseases, imported animals, and weeds. Together, these factors helped to defeat indigenous societies by changing the environment to one more conducive to European-style life. In Chapter 4, ironically titled "The Fortunate Isles," Crosby writes of the Canary Islands and how (in modern terms) "biological warfare" coming from Europe helped to subdue and eventually eliminate the indigenous people. In this way the island chain was transferred *de facto* from being a part of Africa to being a inseparable part of Spain.

The collected essays in *Natural Enemy, Natural Ally: Toward an Environmental History of War* are closer to classic military history and provide a good introduction to how military and environmental history relate to each other.[32] The initial essay by Richard Tucker "The Impact of Warfare on the Natural World" gives a quick overview of the subfield.[33] Tucker emphasizes the wider connection between warfare and nature in the Western world

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[31] Crosby, *Ecological Imperialism*.

[32] Richard P. Tucker and Edmund Russell, eds., *Natural Enemy, Natural Ally: Toward an Environmental History of War* (Corvallis, Oreg., 2004).

[33] Richard Tucker, "The Impact of Warfare on the Natural World," in Tucker and Russell, eds., *Natural Enemy, Natural Ally,* 15–41.

and comments briefly on the seemingly paradoxical relationship between war and nature conservation.

A later chapter by Roger S. Levine, "'African Warfare in All Its Ferocity': Changing Military Landscape and Pre-Colonial Conflict in Southern Africa," transports the reader to southern Africa in a case study of Zulu and Xhosa warfare.[34] Levine examines how the environment in conjunction with cultural factors led to different styles of warfare. The Zulus' open landscape and history of bravery and military success encouraged them to continue their tactical use of open, frontal assaults even when they consistently suffered great losses against well-armed British forces. On the other hand, the wooded, rugged landscape of the Xhosa and their history of hunting encouraged them to change to guerrilla warfare after a first defeat at the hands of the British. The British finally subdued the Xhosa only after destroying their way of life. Levine concludes by briefly considering the long term environmental implications of the warfare. In this way he provides insight into how the landscape defines the conflict and how war changes the landscape.

Centering our attention on Tanzania, we come to several interesting studies concerning warfare from the perspectives of environmental history. The 1905–1907 Maji Maji rebellion against the German colonial government has produced much study, reinvigorated lately on occasion of the 100th anniversary of the uprising. The first examination of the environmental consequences of the warfare came in John Iliffe's *A Modern History of Tanganyika*. In the sixth chapter, Iliffe details the overall impact of the rebellion on the environment.[35]

Expanding on Iliffe's general account, Thaddeus Sunseri has more recently authored several articles concerning the relationship between environmental questions and the outbreak of the rebellion. In "Reinterpreting a Colonial Rebellion: Forestry and Social Control in German East Africa, 1874–1915," Sunseri argues that the German forest controls, declaration of reserves, and hunting ordinances hurt many rural dwellers in the Rufiji and Liwale areas and directly caused the outbreak of the warfare.[36] After the bloody German repression of the revolt, these same laws and controls were continued and expanded to provide a degree of social control of the people in these areas. In another article, "Famine and Wild Pigs: Gender Struggles and the Outbreak of the Majimaji War in Uzaramo (Tanzania)," Sunseri moves north and writes about the Zaramo people.[37] The author relates the outbreak

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[34] Roger S. Levine, "'African Warfare in All Its Ferocity': Changing Military Landscape and Precolonial Conflict in Southern Africa," in Tucker and Russell, eds., *Natural Enemy, Natural Ally,* 65–92.

[35] John Iliffe, "The Maji Maji Rebellion, 1905–07," in *Modern History*, 168–202.

[36] Thaddeus Sunseri, "Reinterpreting a Colonial Rebellion: Forestry and Social Control in German East Africa, 1874–1915," *Environmental History* 8, 3 (July 2003), 430–51.

[37] Thaddeus Sunseri, "Famine and Wild Pigs: Gender Struggles and the Outbreak of the Majimaji War in Uzaramo (Tanzania)," *Journal of African History* 38 (1997), 235–59.

of Maji Maji to German policies by arguing that the new laws caused the Zaramo to lose control of their environment through the loss of men's labor. This also changed the basis of the agricultural system as women began to dominate the production and protection of the crops. Thus, the colonial system created changing economic and social conditions that led to famine and encouraged the revolt. Wild pigs attacking the fields was a symptom of German policies undermining the rural economy. Both of these articles illustrate the close connection between the natural world and warfare, in ways one might not initially expect.

5. Forests: Growth and Deforestation

The perception of Africa as a continent of forests brings to mind the stereotypical image of the "dark continent," best known from Joseph Conrad's novel *The Heart of Darkness*. Dense rainforests certainly do cover portions of Central Africa and the coast of West Africa, but other types of forests extend out beyond this central core, not as majestic as the rainforest but certainly as important for the people and wildlife. Scientists have often viewed these forests as the climax ecosystem in many areas, and policy makers have thus regarded any destruction of these forests as a degradation of nature. They often make the simple assumption that change is a one-way street—a linear transformation from forest to savanna to, eventually, unproductive desert. Environmental historians have examined the question of the human impact on forests from several perspectives and have produced some surprising conclusions, emphasizing the differences and flexibility of forests in Africa.

Jim McCann wrote a comparison of two narratives concerning forests in Ethiopia in the fifth chapter of *Green Land, Brown Land, Black Land.*[38] He asserts that in Ethiopia, forests and humans have existed together for many, many years. One of his cases, the central highland region of Ankober, is an area with few forests. This is not an area of deforestation but rather the existing forests tell a story of the management of scarce resources. The trees here indicate the presence of a concentrated population rather than the remnants of nature (p. 103). In the southwestern highlands of Gera, the dense forests recorded by travelers in the late nineteenth century were the product of re-growth, and were not untouched, primeval forests as Europeans had thought. McCann's two studies show that environmental history often is not a simple, linear storyline of change from past to present conditions but instead is a complex process involving the interaction of social, political, and economic factors that impact the landscape over time.

In West Africa, James Fairhead and Melissa Leach investigated the correlation between humans and forest remnants in the savanna of Guinea and came to surprising conclusions in their study "Enriching the Landscape: Social History and the Management of

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[38] James McCann, "A Tale of Two Forests: Narratives of Deforestation in Ethiopia, 1840–1996," in *Green Land, Brown Land*, 79–107.

Transition Ecology in the Forest-Savanna Mosaic of the Republic of Guinea."[39] They conducted a study of land use to investigate what appeared to be a retreating forest in the forest-savanna transition zone. From the results of their research they argue that, contrary to long held beliefs, the people of Kissidougou are not systematically destroying the forest, leaving only the small, remnant forest islands in their place. Instead the people are actually creating the small forest islands through their settlement, work, and farming activities. The authors see this as a case in which "colonial science" based its conclusion on assumptions of processes rather than actual evidence. Political expediency, accompanied by the assumption that the people were necessarily destructive, led colonial as well as independent governments to accept the scientific rationale that settlement caused deforestation. Fairhead and Leach's case implicitly illustrates Boserup's argument in that the expansion of human settlement can result in a positive change in environmental resources.

A case study in East Africa comes to different conclusions. Christopher Conte examines the changing impact of humans on the land and forests in his article "The Forest Becomes Desert: Forest Use and Environmental Change in Tanzania's West Usambara Mountains."[40] He sets the stage by describing the Mbugu people's precolonial forest use and then discusses how the emerging late nineteenth-century colonial regime completely transformed their forest-based herding system. First German and then British colonial policies changed the Mbugu's resource use while other forces, working in parallel, helped to alter the forest landscape to serve colonial interests. These interests created a well-managed forest where indigenous tree species and indigenous communities hardly had a place. The postcolonial government expanded the amount of forest available to the people for settlement but continued the colonial policies of preservation in the other, still protected, areas.

Conte broadens and deepens this argument in his book *Highland Sanctuary: Environmental History in Tanzania's Usambara Mountains*.[41] In this work he covers both the East and West Usambara mountains and includes the Shambaa as well as the Mbugu people, looking at the effects in more detail. The settlement of the highlands involved use of the forests and the introduction of new crops. After the colonial era began in the late nineteenth century, the two indigenous groups had to contend with new policies and

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[39] James Fairhead and Melissa Leach, "Enriching the Landscape: Social History and the Management of Transition Ecology in the Forest-Savanna Mosaic of the Republic of Guinea," *Africa* 66, 1 (1996), 14–36. The study is presented in James Fairhead and Melissa Leach, "Rethinking the Forest-Savanna Mosaic: Colonial Science and Its Relics in West Africa," in Leach and Mearns, eds., *Lie of the Land,* 105–21. See also the book-length manuscript by James Fairhead and Melissa Leach, *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic* (Cambridge, UK, 1996).

[40] Christopher A. Conte, "The Forest Becomes Desert: Forest Use and Environmental Change in Tanzania's West Usambara Mountains," *Land Degradation & Development* 10 (1999), 291–309.

[41] Christopher Conte, *Highland Sanctuary: Environmental History in Tanzania's Usambara Mountains* (Athens, Ohio, 2004).

pressures. This led to changing forest use by both the local people and the new European immigrants. Conte writes of an ongoing historical tension between the landscape's colonization and recolonization by both people and nature (p. 40). In this process, the Usambaras witnessed many of the same problems much of East Africa faced: deforestation, soil erosion, and a diminishing water supply with the advance of agriculture into formerly forested lands. While not entirely negative, Conte's studies point to how the confluence of changing policies, dense settlement, and limited forest resources lead to a Malthusian result of diminishing resources for the local people.

6. Plants: The Basic Inhabitants

Plants are an important but often overlooked element of the landscape, and often only appear in terms of their relationship to people in environmental history. A focus on plants as actors, however, provides insight into landscape changes and more subtle shifts in the environment as well as revealing another side of concurrent societal changes, often evidenced by changing agriculture.

A few authors have approached the subject of phytogeographic change from interesting perspectives. On the more popular level, two journalists have written interesting histories from the perspective of plants. In *Seeds of Change: Six Plants that Transformed Mankind,* Henry Hobhouse analyzes the Western world's "discovery" and subsequent adoption of six plants and their products that profoundly shaped western development during the age of industrialization—quinine, sugar, tea, cotton, potato, and coca.[42] Similarly, Michael Pollan's *The Botany of Desire* gives a view of the world from the perspective of the spread of plants—the apple, tulip, marijuana, and potato.[43] Both of these books provide interesting insights but are firmly Eurocentric and globally based, looking very broadly at plant history. While neither book includes much about Africa, they are fine introductions to history from a botanical perspective.

In a more scholarly vein, James McCann delves deeply into the history of maize in Africa in his work *Maize and Grace: Africa's Encounter with a New World Crop*.[44] He focuses on how this now ubiquitous crop attained its overwhelming presence in Africa and, in turn, how it has helped to change the environment. Maize has many advantages such as high yield and the potential for unique, valuable characteristics through easy hybridization, but often it is not hardy in areas with unreliable precipitation. Many countries in Africa have adopted maize as a major food source and McCann analyzes some of the unintended

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[42] Henry Hobhouse, *Seeds of Change: Six Plants that Transformed Mankind*, new ed. (London, 2002).

[43] Michael Pollan, *The Botany of Desire: A Plant's-Eye View of the World* (New York, 2001).

[44] James McCann, *Maize and Grace: Africa's Encounter with a New World Crop* (Cambridge, Mass., 2005).

consequences of this adoption, including a fascinating look at the potential connection between maize cultivation and malaria. As maize has become the dominant cultivar in parts of the Ethiopian highlands, the incidence of malaria has increased greatly. McCann discusses (pp. 192–95) the suspected correlation of factors in which maize cultivation and the dispersal of maize pollen in close proximity to mosquito habitats and human settlements has increased the transmission of malaria.[45]

Finally, Lucile Brockway's *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* studied the intellectual and institutional background of the Kew Royal Botanical Gardens and the actual transfer of three plants from the Americas throughout the British Empire: cinchona, rubber, and sisal.[46] Brockway views seeds as one of the most precious and easily transportable cultural artifacts and in this regard she observes a close connection between imperial expansion and the natural sciences. These British imports had a great impact throughout Africa. Cinchona's extract quinine opened up the possibility for large numbers of Europeans to live and work in tropical Africa. In East Africa the attempts at rubber production (especially the early attempts with *Manihot glaziovii*—ceara rubber) and the enduring importance of sisal transformed large areas of East Africa into productive plantations.

7. Savannas: Agriculture, Pastoralism, and Change

A common image of Africa is one of endless, undisturbed, grass-covered savannas; this image, however, holds true only in limited areas. Most existing savannas change composition with the cycles of nature, and many people live and work on the savannas as herders or farmers. In this way the land is dynamic, not static, and in active ecological transformation either to another type of land cover or to more productivity. Actual or perceived "degradation" often accompanies these landscape transformations and may be manifest in problems such as overgrazing or erosion. Environmental historians find these phenomena interesting and worthy of study, often producing unexpected conclusions.

Holly Dublin, in her article "Dynamics of the Serengeti-Mara Woodlands: A Historical Perspective," looked at what has become the archetypal savanna landscape. [47] She charts three periods in the history of the Serengeti and describes how this dynamic ecosystem

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[45] See also Yemane Ye-Ebiyo et al., "Enhanced Development in Nature of Larval *Anopheles arabiensis* Mosquitoes Feeding on Maize Pollen," *American Journal of Tropical Medicine and Hygiene* 63, 1 (2000), 90–93; and Asnakew Kebede et al., "New Evidence of the Effects of Agro-Ecologic Change on Malaria Transmission," *American Journal of Tropical Medicine and Hygiene* 73, 4 (2005), 676–80.

[46] Lucile H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York and London, 1979).

[47] Holly T. Dublin, "Dynamics of the Serengeti-Mara Woodlands: A Historical Perspective," *Forest & Conservation History* 35 (October 1991), 169–78.

has changed during the last 100 years. Using a combination of aerial photographs, surveys and written descriptions, Dublin discovered that before the 1930s, open grasslands predominated; from the 1930s to 1960s, the grasslands tended to change to woodland; and after the 1960s, the grasslands returned. Her study is not only significant in detailing the changing face of the Serengeti, but also in explaining how the changes were effected by fire and elephants which were, in turn, influenced by the social, political, and economic dynamics in the surrounding human society. Despite the large, intact ecosystem protected by the Tanzanian and Kenyan governments, both colonial and independent, the Serengeti feels the effects of neighboring humans.

While people usually viewed the Serengeti as an unchanging landscape, the European colonial powers often assumed the indigenous people generally had a negative impact on the savannas, as illustrated by Hardin's "tragedy of the commons." Many actual case studies put Hardin's argument into historical context, but one of the best illustrates the situation and the colonial response of the 1930s in East Africa. David Anderson's "Depression, Dust Bowl, Demography and Drought" tells how the four factors listed in the title brought the danger of overgrazing by cattle of the indigenous Africans to the attention of colonial officials.[48] Anderson describes how the officials then attempted to solve the perceived problem throughout East Africa (Uganda, Kenya, and Tanganyika) by a combination of forced reduction of herds and soil conservation practices. These solutions fell in-line with Western science but generally neglected African societies' cultural norms and realities. While this did not solve the perceived problems, it did add fuel to the fire of nationalism, helping to propel the countries toward independence in the early 1960s. Anderson illustrates how the lack of sufficient local knowledge on the part of the colonial experts led to the adoption of policies inappropriate to the situation.

Overgrazing often was seen as the cause of erosion on the savannas and some areas did become seriously eroded. One case study, *More People, Less Erosion*, covered a history of fifty years and investigated the impact of population growth on resource management in Machakos District in Kenya, an area that was once heavily eroded.[49] Using a variety of sources including photographs spanning the period, the researchers discovered that "*Malthusian* outcomes" in this area were avoided. The population increase was compatible

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[48] David Anderson, "Depression, Dust Bowl, Demography, and Drought: The Colonial State and Soil Conservation in East Africa during the 1930s," *African Affairs* 83 (1984), 321–43. A similar story of politicians not interpreting degradation correctly in Apartheid South Africa can be found in William Beinart, "Soil Erosion, Animals, and Pasture over the Longer Term: Environmental Destruction in South Africa," in Leach and Mearns, eds., *Lie of the Land,* 54–72.

[49] Mary Tiffen, Michael Mortimore, and Francis Gichuki, *More People, Less Erosion: Environmental Recovery in Kenya* (Chichester, UK, 1994). For an interesting perspective on erosion from a soil scientist, bringing out the complexities of the subject, cf. Michael Stocking, "Soil Erosion: Breaking New Ground," in Leach and Mearns, eds., *Lie of the Land,* 140–54.

with environmental recovery since market developments made agriculture profitable; the local people would readily invest in the environment when it made economic sense. This was a special case supporting Boserup's thesis but the emphasis here lay to a great extent in marketing opportunities. Furthermore, this study supports the contention that environmental degradation is not always a one-way street, it can be corrected when the conditions are right.

A final look at agriculture on the savanna brings us to the case of intensive agriculture. The collection of essays titled *Islands of Intensive Agriculture in Eastern Africa* focuses on the characteristics of intensive systems and why they developed.[50] In this volume, the authors focus on the intensive grain-producing regions (sorghum, finger-millet, and maize) lying in altitude between the banana highlands (e.g., Mt Kilimanjaro) and the extensive grain cultivation on the savanna. Overall, the contributors to this volume reject various past theories, such as agricultural intensification being the result of a siege by warlike peoples, or being due to an evolving sociopolitical hierarchy. Instead they see a number of diverse, local factors as being responsible. Economics and population growth are important, but so are social networks, evolving ethnicity, the diversity of cultivars, the presence of cattle to provide manure, and environmental conditions. Each of the five case studies illustrates different specific conditions, but all show that intensification results from a combination of pressures and is not simply the endpoint of an evolutionary agricultural spectrum, as the European developmental model had posited.

8. Wildlife: From Hunting to Conservation with a Social Face

Another image of the savannas—a home to large mammals living in untouched nature—holds sway in the imagination almost as powerfully today as before the colonial period; yet, African wildlife has been living in concert with humans since time immemorial. At one time, hunting supported many societies, but the concept was turned on its head by first the colonial-era European travelers, then settlers. In reaction to the over exploitation of wildlife, the colonial and later independent administrations began selectively to protect natural resources, with the protection slowly increasing in scope and then transforming from a top-down to bottom-up management approach in some areas.

The first interest in and concern for the environment in the colonial world primarily came from the overseas British, French, and Dutch colonies, as documented by Richard Grove in *Green Imperialism*. [51] The Caribbean, Mauritius, as well as India and the southern African Cape provided laboratories for the first imperial scientists to observe the environmentally destructive actions of the early colonial governments, settlers, and private businesses. Due to the confluence of this observation and the expansion of communication

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[50] Widgren and Sutton, eds., *Islands of Intensive Agriculture.*

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

networks among scientists, the colonial governments were forced to begin to make policies—some of the first *green* policies—to counteract the environmental problems. This early environmental concern remained primarily confined to smaller island-like regions. It did not expand to the large areas of virtually untouched land (from the European perspective) populated with wild animals, primarily in southern and eastern Africa.

John MacKenzie examines these large "untouched" areas in *The Empire of Nature* by focusing on hunting and the slow growth of environmental protection.[52] He looks first at the hunting ethos brought to Africa from Europe, compares this briefly with hunting in African societies, and then puts it into historical perspective as he examines changes over time. The Europeans initially lived off the game in eastern and southern Africa, using it to subsidize colonial expansion into the African interior. As the regions became more heavily dominated by the European powers, hunting changed into "the Hunt," a social and sporting activity that saw shooting wildlife as a game with rules. In turn, the European administrations denied the Africans their traditional subsistence use of wildlife, claiming that the African methods were unfair and detrimental to the animal populations. As the wildlife population started to become threatened through "the Hunt," as well as the expansion of farming, the colonial administrations turned to preservation to ensure the survival of favored species. Over time, the concept of preservation slowly evolved to become environmental conservation, which looked more holistically at the value of all species to the ecosystem and set the stage for further advances in the protection of nature, especially in the settler colonies of South Africa and Kenya.

Edward Steinhart, in a study similar to MacKenzie's, looks at one case in his article "Hunters, Poachers, and Gamekeepers: Towards a Social History of Hunting in Colonial Kenya."[53] Using interviews, he examines precolonial hunting and then looks at European hunters as they changed their focus from subsistence to sport hunting with formal rules. Steinhart thus sees the emergence of two competing hunting cultural traditions—the African conception of hunting for subsistence and the European idea of sport. In parallel he deals with the evolution of Africans as guards and trappers within the system of sport and the Europeans as gamekeepers—racial segregation was prevalent even on the savannas!

Another work appeared in the wake of the environmental disasters of the 1980s that continued the historical storyline of preservation to conservation that MacKenzie had begun. David Anderson and Richard Grove's collection *Conservation in Africa* inserts the social context (rural development, social change, politics—i.e., the local people) into writings about

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[52] John MacKenzie, *The Empire of Nature: Hunting, Conservation, and British Imperialism* (Manchester, UK, and New York, 1988).

[53] E[dward] I. Steinhart, "Hunters, Poachers, and Gamekeepers: Towards a Social History of Hunting in Colonial Kenya," *Journal of African History* 30 (1989), 247–64.

conservation in Africa.[54] Anderson and Grove examine four general themes, each of which is explored in four case studies. The first section casts a historical look back at the Cape, hunting, tsetse and ecological crisis, and land use planning. The next section explores the many relationships between wildlife, parks and pastoralists. The third section looks at the political dimension of conservation by explaining how the application of technical knowledge brought in from outside to solve environmental problems will fail if divorced from local political issues. The final section looks at the intersection of precolonial environmental management and its encounter with current environmental problems that have greatly increased in scope and seriousness from those of the precolonial period. Most of the sixteen individual case studies look at East Africa, with a heavy concentration on Kenya (seven); only three case studies deal with West Africa. While some of the essays reflect a political context that no longer exists, the social issues remain salient and land has a memory—making the book still valuable.

Jonathan Adams and Thomas McShane provide a different perspective in their book *The Myth of Wild Africa: Conservation without Illusion*, which looks at the state of nature conservation on the continent.[55] They devote much attention to the historical question of hunting, presenting a picture similar to MacKenzie's—that of the common Western view that Africans merely despoil nature. Later in the work, they look at the issues surrounding contemporary hunting, contrasting the general governmental prohibitions inspired by Western park management practices versus the needs of the local people. A theme running throughout the book concerns whether wildlife is an asset or a liability to the local people. If the former, the local people will help further the conservation agenda; if the latter, they will tend to kill animals, either to sell or in order to protect their land and crops from damage. Their final conclusion is that Africans do care about conservation but must find solutions acceptable within their societies. Thus, conservation and development must happen together—an idea diametrically opposed to the traditional Western view that these concepts are contradictory and incompatible. *The Myth of Wild Africa* brings Anderson and Grove into the present in an easy-to-read style that covers many of the important elements of conservation in touch with the African people.

9. Cities: Urbanization and the Changing Face of Settlement

Bringing environmental history and urbanization together is difficult perhaps because, in the popular imagination, the human-built city has little of the natural environment left in it. Due to this misconception, and the fact that environmental history began by looking at rural landscapes, environmental historians have begun to look at urban areas only relatively

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[54] David Anderson and Richard Grove, eds., *Conservation in Africa: People, Policies, and Practice* (Cambridge, UK, 1987).

[55] Adams and McShane, *Myth of Wild Africa*.

recently. As part of this phenomenon, Martin Melosi in his think-piece, "The Place of the City in Environmental History," asks if cities belong in environmental history. He answers this question with an enthusiastic "yes," although he realizes that most literature has not looked at cities from that perspective.[56] As part of his answer, Melosi summarizes the sociological and geographical theories concerning urban growth and then discusses what he calls "bridge literature" from technical studies into urban environmental history in three categories: urban growth, city building, and pollution. While this article does not mention Africa, it offers many suggestions for background literature for the study of cities in African environmental history.

African urbanization reaches far back into history and includes examples of many different kinds of cities, such as trading settlements on the edge of the desert in West Africa or on the East African coast. Great Zimbabwe, a large city with monumental architecture, extended its influence over a large area in southern Africa and then suddenly collapsed, perhaps due to environmental problems.[57] The modern urban history of Africa began during the colonial period with the beginning of a quantitatively greater expansion of city building. Many of the historic, precolonial trading centers continued to thrive, but to these came the coastal enclaves and colonial administrative centers as a result, respectively, of expanding European-African trade and the European colonial domination. The colonial period set the stage for Africa to have one of the fastest urbanization rates in the world. While the large, sprawling cities of Africa do not yet compare with those in Asia (except in a few circumstances such as Lagos, Nigeria), the dynamic nature of urban settlement changes the environmental context in which growing numbers of people live. Among the many rich lines of the environmental history of cities that can be pursued, one of the oldest and best researched is the connection between growing cities and their surrounding countryside.

Ronald Horvath's "The Wandering Capitals of Ethiopia" goes back to the precolonial era and presents the relationship between a moving urban area and the surrounding, ever-changing countryside.[58] Horvath describes how the capital of Ethiopia typically moved around many times each year, particularly in the sixteenth century, while still having many of the usual characteristics of an urban settlement: size and density of population, predominance of non-agricultural functions, role of administration, and presence of the literati. Horvath argues that the movement was undertaken primarily due to military considerations, but the moves affected the environment, creating a feedback loop. The capital moved to locations where food was available, and then extensively exploited the timber in the area. The food

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[56] Martin V. Melosi, "The Place of the City in Environmental History," *Environmental History Review* 17, 1 (Spring 1993), 1–23.

[57] A short discussion can be found in McCann, *Green Land, Brown Land,* 32–36.

[58] Ronald J. Horvath, "The Wandering Capitals of Ethiopia," *Journal of African History* 10, 2 (1969), 205–19.

demands of the capital impoverished the local area, and the mobile capital's residents had no motivation to conserve resources since they would be moving on to areas where resources were more plentiful. These secondary effects of a degraded environment tended to perpetuate mobility, since a sudden settlement stabilization would be difficult in a degraded area. Horvath's work provides an interesting perspective on the food and firewood demands a city can make on its surrounding areas, especially an area with no established system to deliver the products.

With the advent of the colonial period, the city's connection to surrounding areas and impact on the environment remained important issues. Jane I. Guyer's collected volume *Feeding African Cities* looked at four colonial cities individually and in comparison—Kano, Yaounde, Dar es Salaam, and the former Salisbury (now Harare).[59] Within this volume, Deborah F. Bryceson looked at one case in "A Century of Food Supply in Dar es Salaam."[60] The central issue in this city was matching rural food supply with urban demand thorough the link of the marketing agents. Bryceson compared three periods of food crisis in the city. After the German destruction of the plantation-slave system in the late nineteenth century, the problems of supply and transportation of foodstuffs to provision the growing city took many forms. In the early years (before 1907) the growing city concentrated the food supply around itself due to the logistic constraints of moving food quickly over long distances. After 1907, with the construction of the railroad, the hinterland opened up to supply food, but any large quantities were still subject to pervasive environmental constraints. The potential supply sources for Dar es Salaam grew over the ensuing years so that by about 1939 Dar es Salaam began to grow at an average of about 7.9 percent per year. The food supply increased in parallel, but not only the domestic supply, for Tanzania slowly became a net importer of grain. Bryceson's story shows how a growing colonial city began to connect with the countryside and how production there focused on what the urban population needed.

Olga F. Linares provides another perspective on the problem of supplying urban inhabitants with food and other rural-origin supplies in Africa. Linares offered one example in her "Cultivating Biological and Cultural Diversity," an anthropological study of Ziguinchor, the capital of the Casamance region in Senegal.[61] She argues that growing crops on neglected or partially built-up land in urban areas serves two broad functions—strengthening social ties while enriching the environment. Linares describes how urban dwellers converted the city into farms and describes how "the biological capital" of the city

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[59] Jane I. Guyer, ed., *Feeding African Cities: Studies in Regional Social History* (Bloomington, Ind., 1987).

[60] Deborah F. Bryceson, "A Century of Food Supply in Dar es Salaam," in Guyer, ed., *Feeding African Cities,* 154–201.

[61] Olga F. Linares, "Cultivating Biological and Cultural Diversity: Urban Farming in Casamance, Senegal," *Africa* 66, 1 (1996), 104–21.

was raised in many ways. The air is cleaner through the work of plants; trips to bring the crops to market are shorter; the microclimate is improved through recycling organic material; the gardens/crops help to protect against erosion and mosquitoes; and illlnesses—such as cholera—are reduced. The biodiversity of the city is increased by providing protection from hunters and birds, as well as by the large number of planted crops. Finally, the connections between different groups are intensified through the farming process. Linares argues that the interests of conservationists and poor migrants converge in urban farming.

Leaving, for a moment, the subject of supplying the urban areas, we return to East Africa and Thomas Spear's "'A Town of Strangers' or 'A Model Modern East African Town'? Arusha & the Arusha."[62] In this article, Spear wrote of the development of a European colonial town on the slopes of Mt. Meru in northern Tanzania after 1900. He sees the development as a ceaseless struggle over land, primarily between the Arusha people who wanted to maintain their way of life and European colonists (first German then British) who sought to build a "modern" town shaped by their ideas of social structure/separation and the proper use of an urban area. This is a study of competing visions for a growing urban area and is significant from an environmental perspective as it shows how a new urban area is superimposed on the former/traditional use pattern and landscape.

Finally, William Cronon's *Nature's Metropolis* provides much insight into the expansion of cities through his study of the development of the Chicago urban area and its relationship to the expanding economy of the new American West.[63] Despite the lack of obvious similarities, Chicago's history shares many characteristics in common with most colonial cities in Africa—all are products of colonial expansion and serve as central collecting areas for the surrounding rural countryside, composed primarily of small producers. Cronon writes that the history of urban development is closely connected to the development of the rural hinterland, and he analyzes this development process from two important perspectives: the construction of links, primarily economic, and the transformation of a nature governed primarily by the flows of energy to one governed by the flows of capital.

Last Thoughts

Our short walk through African environmental history stopped at many case studies, but these are only starting points. When we begin with any of these studies, two things must be kept in mind. First, history rarely has *right* or *wrong* answers; rather, it has different interpretations. However, not all interpretations are equal; some are better than others. In

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[62] Thomas Spear, "'A Town of Strangers' or 'A Model Modern East African Town'? Arusha & the Arusha," in David M. Anderson and Richard Rathbone, eds., *Africa's Urban Past* (Oxford, 2000), 109–25.

[63] William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York, 1991).

considering this contention, we can refer to a valuable essay written by one of the deans in the field of environmental history. In his article "A Place for Stories: Nature, History and Narrative," William Cronon simply asks how historians can write completely different narratives using the same basic historical facts.[64] He uses the history of the Great Plains and the Dust Bowl as his example. Cronon looks at some of the problems of writing history that arise from the fact that it is based upon human experiences and viewpoints, and must always be examined within the cultural context of the writer and the sources. He concludes that historians essentially tell stories based upon their own interpretation of valid sources. They do this in order to fix some order upon the disorder and sheer number of sources and perspectives. His ultimate conclusion recognizes the value of the different interpretations with the important insight that historical writing does not have to descend to a postmodern meaninglessness. He maintains that the product of historians—the narratives—are constrained by three simple but important elements: 1) they can't contradict known facts about the past, 2) they must make ecological sense, and 3) historians write as members of communities of scholars and others who will evaluate the narratives. For environmental historians, this article provides a way of understanding and grappling with the art of writing history that comes from within the field itself.

Second, when one begins the study of African environmental history from any one of the nine important themes listed above, the recommendations should merely be viewed as starting points. Using the books and articles discussed here, one can dig deeper by looking for other sources either in the footnotes or the bibliographies and then branch either regionally or thematically from the given starting point. We looked only briefly at nine themes, but many other equally interesting and valid themes lie open to curious scholars. History as a discipline is wonderful for it lets students concentrate on virtually any area; the importance lies in how one uses the sources and constructs an argument. Coming virtually full circle, John Edward Philips, in the aptly-named chapter "Writing African History," lays out the basics of what an African historian must consider when writing, and some of the ways to proceed.[65]

Our examination of African environmental history can be summarized in a few brief observations. Few if any ecosystems in Africa are undisturbed by human activity, and all can be the fruitful subject of historical research. Additionally, the complex interaction between humans and their "natural environment" is dynamic and never one-sided. This dynamic interaction may lead to adaptations by human societies in response to environmental conditions, and always has an impact on the environment. Environmental change is not necessarily degradation. Degradation is subjective; it is a relative concept. What is considered to be a

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[64] William Cronon, "A Place for Stories: Nature, History and Narrative," *Journal of American History* 78, 4 (March 1992), 1347–76.

[65] John Edward Philips, "Writing African History," in Philips, ed., *Writing African History*, 493–510.

degraded landscape by a hunter-gatherer may be viewed as prime land by an agriculturalist. The term degradation cannot be used without qualification and contextualization. In this regard, the historian must always be willing to consider alternative viewpoints and be prepared for unexpected conclusions. The discipline of African environmental history is a wide-ranging, multidisciplinary field that has the potential to provide new and valuable insights on the development of African societies in their environmental context.

Bibliography of Works Discussed*

Environmental History—to Africa and then Tanzania

Iliffe, John. *Africans: The History of a Continent*. Cambridge, UK: Cambridge University Press, 1995.

Iliffe, John. *A Modern History of Tanganyika*. Cambridge, UK: Cambridge University Press, 1979.

Kjekshus, Helge. *Ecology Control and Economic Development in East African History: The Case of Tanganyika 1850–1950*. Berkeley, Calif.: University of California Press, 1977, and 2nd ed. London: James Currey, 1996.

McCann, James. *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800–1990*. Portsmouth, N.H.: Heinemann, and Oxford, UK: James Currey, 1999.

Philips, John Edward. "What is African History?" In *Writing African History*, edited by John Edward Philips, 25–48. Rochester, N.Y.: University of Rochester Press, 2005.

Stewart, Mart A. "Environmental History: Profile of a Developing Field." *The History Teacher* 30, 3 (May 1998), 351–68.

---

*Note: Only the works *discussed* in the paper are listed here and if discussed in more than one section, full citations are given below each section heading to ease future reference. Other works merely mentioned in the footnotes are not included in this bibliography.

1. Images: How the West Understands Africa

Adams, Jonathan S., and Thomas O. McShane. *The Myth of Wild Africa: Conservation without Illusion.* New York: W.W. Norton, 1992; Berkeley: University of California Press, 1996.

Boserup, Ester. "Environment, Population and Technology in Primitive Societies." In *The Ends of the Earth: Perspectives on Modern Environmental History*, edited by Donald Worster, 23–38. Cambridge and New York: Cambridge University Press, 1988.

Hardin, Garrett. "The Tragedy of the Commons." *Science* 162 (13 Dec. 1968), 1243–48.

Hopkins, Anthony G. *An Economic History of West Africa*. New York: Columbia University Press, 1973.

Leach, Melissa, and Robin Mearns. *The Lie of the Land: Challenging Received Wisdom on the African Environment.* Oxford: James Currey, 1996.

Malthus, T.R. *An Essay on the Principle of Population*. Various.

2. The Physical World: "Natural Actors" in Environmental History

Brooks, George E. *Landlords and Strangers: Ecology, Society and Trade in Western Africa, 1000–1630*. Boulder, Colo.: Westview, 1993.

Crosby, Alfred. *Ecological Imperialism: The Biological Expansion of Europe, 900–1900*. Cambridge: Cambridge University Press, 1986.

Diamond, Jared. *Guns, Germs and Steel: A Short History of Everybody for the Last 13,000 Years*. London: Vintage, 1998.

McCann, James. "Climate and Causation in African History." *International Journal of African Historical Studies* 32, 2–3 (1999), 261–79.

Nicholson, Sharon E. "The Methodology of Historical Climate Reconstruction and Its Application to Africa." *Journal of African History* 20, 1 (1979), 31–49.

Pyne, Stephen J. "Veld Fire (South Africa)." In *World Fire: The Culture of Fire on Earth*. Seattle, Wash. and London: University of Washington Press, 1997.

Pyne, Stephen J. *Vestal Fire: An Environmental History, Told through Fire, of Europe and Europe's Encounter with the World*. Seattle, Wash. and London: University of Washington Press, 1997.

Webb, James L.A. *Desert Frontier: Ecological and Economic Change along the Western Sahel, 1600–1850*. Madison, Wisc.: University of Wisconsin Press, 1995.

3. Disease: An Age-Old Plague

Brooks, George E. *Landlords and Strangers: Ecology, Society and Trade in Western Africa, 1000–1630*. Boulder, Colo.: Westview, 1993.

Ford, John. *The Role of the Trypanosomiasis in African Ecology*. Oxford: Oxford University Press, 1971.

Giblin, James. L. "East Coast Fever in Socio-Historical Context: A Case Study from Tanzania." *International Journal of African Historical Studies* 23, 3 (1990), 401–21.

Giblin, James L. *The Politics of Environmental Control in Northeastern Tanzania, 1840–1940*. Philadelphia: University of Pennsylvania Press, 1992.

Kjekshus, Helge. *Ecology Control and Economic Development in East African History: The Case of Tanganyika 1850–1950*. Berkeley, Calif.: University of California Press, 1977, and 2nd ed. London: James Currey, 1996.

Waller, Richard D. "Tsetse Fly in Western Narok, Kenya." *Journal of African History* 31 (1990), 81–101.

Webb, James L.A. *Desert Frontier: Ecological and Economic Change along the Western Sahel, 1600–1850*. Madison, Wisc.: University of Wisconsin Press, 1995.

4. Warfare: Conflict at Its Sharpest

Crosby, Alfred. *Ecological Imperialism: The Biological Expansion of Europe, 900–1900*. Cambridge: Cambridge University Press, 1986.

Iliffe, John. "The Maji Maji Rebellion, 1905–07." In *A Modern History of Tanganyika,* 168–202. Cambridge: Cambridge University Press, 1979.

Levine, Roger S. "'African Warfare in All Its Ferocity': Changing Military Landscape and Precolonial Conflict in Southern Africa." In *Natural Enemy, Natural Ally: Toward*

and Environmental History of War, edited by Richard P. Tucker and Edmund Russell, 65–92. Corvallis, Oreg.: Oregon State University Press, 2004.

Sunseri, Thaddeus. "Famine and Wild Pigs: Gender Struggles and the Outbreak of the Majimaji War in Uzaramo (Tanzania)." *Journal of African History* 38 (1997), 235–59.

Sunseri, Thaddeus. "Reinterpreting a Colonial Rebellion: Forestry and Social Control in German East Africa, 1874–1915." *Environmental History* 8, 3 (July 2003), 430–51.

Tucker, Richard. "The Impact of Warfare on the Natural World." In *Natural Enemy, Natural Ally: Toward and Environmental History of War*, edited by Richard P. Tucker and Edmund Russell, 15–41. Corvallis, Oreg.: Oregon State University Press, 2004.

5. Forests: Growth and Deforestation

Conte, C[hristopher] A. "The Forest Becomes Desert: Forest Use and Environmental Change in Tanzania's West Usambara Mountains." *Land Degradation & Development* 10 (1999), 291–309.

Conte, Christopher. *Highland Sanctuary: Environmental History in Tanzania's Usambara Mountains*. Athens: Ohio University Press, 2004.

Fairhead, James, and Melissa Leach. "Enriching the Landscape: Social History and the Management of Transition Ecology in the Forest-Savanna Mosaic of the Republic of Guinea." *Africa* 66, 1 (1996), 14–36.

McCann, James. "A Tale of Two Forests: Narratives of Deforestation in Ethiopia, 1840–1996." In *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800–1990*, 79–107. Portsmouth, N.H.: Heinemann, and Oxford: James Currey, 1999.

6. Plants: The Basic Inhabitants

Brockway, Lucile H. *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens*. New York and London: Academic Press, 1979.

McCann, James. *Maize and Grace: Africa's Encounter with a New World Crop*. Cambridge, Mass.: Harvard University Press, 2005.

Pollan, Michael. *The Botany of Desire: A Plant's-Eye View of the World*. New York: Random House, 2001.

Hobhouse, Henry. *Seeds of Change: Six Plants that Transformed Mankind*. New ed. London: Shoemaker & Hoard, 2002.

7. Savannas: Agriculture, Pastoralism and Change

Anderson, David. "Depression, Dust Bowl, Demography and Drought: The Colonial State and Soil Conservation in East Africa during the 1930s." *African Affairs* 83 (1984), 321–43.

Dublin, Holly T. "Dynamics of the Serengeti-Mara Woodlands: A Historical Perspective." *Forest & Conservation History* 35 (October 1991), 169–78.

Tiffen, Mary, Michael Mortimore, and Francis Gichuki. *More People, Less Erosion: Environmental Recovery in Kenya*. Chichester, UK: John Wiley & Sons, 1994.

Widgren, Mats, and John E.G. Sutton (eds.). *Islands of Intensive Agriculture in Eastern Africa.* Athens: Ohio University Press, 2004.

8. Wildlife: From Hunting to Conservation with a Social Face

Adams, Jonathan S., and Thomas O. McShane. *The Myth of Wild Africa: Conservation without Illusion.* New York: W.W. Norton, 1992.

Anderson, David, and Richard Grove, eds. *Conservation in Africa: People, Policies, and Practice.* Cambridge: Cambridge University Press, 1987.

Grove, Richard. *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism 1600–1860*. Cambridge: Cambridge University Press, 1995.

MacKenzie, John. *The Empire of Nature: Hunting, Conservation, and British Imperialism*. Manchester, UK: Manchester University Press, and New York, 1988.

Steinhart, E[dward] I. "Hunters, Poachers, and Gamekeepers: Towards a Social History of Hunting in Colonial Kenya." *Journal of African History* 30 (1989), 247–64.

9. Cities: Urbanization and the Changing Face of Settlement

Bryceson, Deborah F. "A Century of Food Supply in Dar es Salaam." In *Feeding African Cities: Studies in Regional Social History*, edited by Jane I. Guyer, 154–201. Bloomington: Indiana University Press, 1987.

Cronon, William. *Nature's Metropolis: Chicago and the Great West.* New York: W.W. Norton, 1991.

Guyer, Jane I. *Feeding African Cities: Studies in Regional Social History*. Bloomington: Indiana University Press, 1987.

Horvath, Ronald J. "The Wandering Capitals of Ethiopia." *Journal of African History* 10, 2 (1969), 205–19.

Linares, Olga. "Cultivating Biological and Cultural Diversity: Urban Farming in Casamance, Senegal." *Africa* 66, 1 (1996), 104–21.

Melosi, Martin V. "The Place of the City in Environmental History." *Environmental History Review* 17, 1 (Spring 1993), 1–23.

Spear, Thomas. "'A Town of Strangers' or 'A Model Modern East African Town?' Arusha & the Arusha." In *Africa's Urban Past*, edited by David M. Anderson and Richard Rathbone, 109–25. Oxford: James Currey, 2000.

Last Thoughts

Cronon, William. "A Place for Stories: Nature, History and Narrative." *Journal of American History* 78, 4 (March 1992), 1347–76.

Philips, John Edward. "Writing African History." In *Writing African History*," edited by John Edward Philips, 493–510. Rochester, N.Y.: University of Rochester Press, 2005.

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