

Latitudes and longitudes: comparative perspectives on Cape environmental history*

NANCY J. JACOBS

Brown University

Both South African and environmental history lend themselves to international comparisons. South Africa's bifurcated state and society provide an anchorage for comparisons along latitudes with settler societies of the New World and also along longitudes with tropical Africa. These latitudinal and longitudinal arcs intersect in the territory that was the Cape Colony and pre-1994 Cape Province. Historical comparisons with settler societies are centred on the Cape because, to the extent that South Africa became a settler society,¹ it happened in this province, which had the highest proportion of people with some European descent. Comparing tropical Africa to the northern and eastern borders of the Cape territory is possible and appropriate. Here, the Cape encompassed the southern reach of densely settled, iron-using agropastoralist populations that were too deeply grounded in the landscape to be replaced by whites. Rather than developing a settler society, these areas experienced colonialism as tropical Africa did.

The comparative and international sides of environmental history emerge from the field's concerns with global processes, in particular, the environmental basis of economic development and the transformation of ecosystems. Environmental history is a relatively new field, so it may be helpful to identify the centre and parameters of that field. Jane Carruthers, an environmental historian of South Africa, has offered a succinct definition: environmental history concerns 'the nexus between humanity and the environment interacting as partners in a distinctive historical context.'² The 'partnership nexus' includes both nonhuman forces in history and the human impact on the environment. Perhaps more than specialists of some other regions, South African environmental historians remain strongly rooted in the tradition of social history, meaning the 'distinctive historical context' of interactions with the environment.³

The Cape (and to a lesser extent, South Africa as a whole) is a paradox. It is 'more European' than other parts of Africa but 'more African' than other places

* I thank Jane Carruthers, Libby Robin, Andrew Bank, and Lance van Sittert for their helpful comments on an earlier draft of this paper. As always, I am also indebted to Peter Heywood and Allison Shutt.

1. By suggesting that South Africa as a whole fell short of qualifying as a settler society, I am not judging the development of a distinctive settler culture with its own institutions. Rather, I base my assessment on the extent to which the settler population replaced the indigenous one. According to this measure, a settler society did not develop in South Africa to the extent that occurred in North America or Australia.

2. J. Carruthers, 'Environmental History in Southern Africa: An Overview,' in S. Dovers, R. Edgecombe and B. Guest, eds., *South Africa's Environmental History: Cases and Comparisons* (Cape Town: David Philip, 2002), 4.

3. P. Steyn, 'The Greening of Our Past? An Assessment of South African Environmental Historiography' (web page) (H-Net, November 13 2000; cited May 15 2003); available from www2.h-net.msu.edu/~environ/historiography/safrica.htm (originally published in *New Contree*, vol. 46, 1999; W. Beinart, 'African History and Environmental History,' *African Affairs*, vol. 99, 2000; S. Dovers, 'Commonalities and Contrasts: An Australian View,' in Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*).

where Europeans recreated their homelands. The Cape sustains comparisons with two such different groups because they are based on different aspects of its history. The latitudinal axis between South Africa and temperate-zone settler societies exhibits the most obviously biological connections because the ecologies and the reciprocal effects of the human-environmental partnering are similar.⁴ Because the lines of longitude between the Cape Province and tropical Africa run through many climate and environmental zones, explicitly biophysical comparisons are more difficult. Here, the strongest explanation of common processes draws on the tradition of social and political history, by tracing a thin but tensile thread on the respective abilities of states to exercise force on environmental relations. The 'distinctive historical context' of colonial Africa provides a commonality in the history of the ways people across the continent have related to the environment. Although this connection is not explicitly environmental, it is central to the interactions between people and the biophysical world. While comparative analysis may legitimately bring out difference, the search here is for similarities, to gain insight into common and fundamental forces.

This essay reviews connections between the environmental history of the Cape and similar cases along lines of latitude and longitude. It draws on many historical works, some explicitly comparative, some showing common processes in global or regional history, and some strictly local studies. More than offering a comprehensive survey of world, African, or Cape environmental history, it probes points of comparison and examines the links between the environmental history of the Cape and, on the one hand settler societies in temperate zones and on the other hand tropical Africa.

Peopling the Cape and Other African Environments

As a quick perusal of most textbooks would indicate, the earliest history of Africa lends itself to environmental explanations. Yet, finding continent-wide processes in this earliest environmental history is not easy. Because the African environment is diverse, any common environmental relations in the Sahel, the Congo basin, the Serengeti plains, the mopane woodlands, and the fynbos are probably global rather than specific to Africa. John Iliffe has hypothesized that the difficulties of populating its unfriendly environments set the history of Africa apart from other continents, although his explanation of the difficult characteristics of those environments is not very specific.⁵ While pioneering humans in Africa certainly faced natural challenges, environments also offered benefits. People exerted themselves not just against the environment, but also to shape it to their advantage. The analysis of environmental influences on population growth or other aspects of human history must be specific about the particular environments and the choices people made about living in them.

-
4. There is a strong tradition of comparisons between South Africa and the United States, but many of the works that revolve around the black-white racial dynamic have little environmental analysis. Examples include: G. Fredrickson, *White Supremacy: A Comparative Study in American and South African History* (New York: Oxford University Press, 1981). Safundi, an electronic journal dedicated to American-South African comparative studies: <http://www.safundi.com/> (Accessed July 15, 2003).
 5. J. Iliffe, *Africans: History of a Continent* (New York: Cambridge, 1995).

Another possible unifying theme lies in the earliest food production. In eastern, central, and southern Africa, the spread of agropastoralism, along with iron smelting and Bantu languages, was a major transformation. Many archaeologists, linguists, and historians have written about this process, but this essay provides an opportunity to discuss the summary of their work by environmental historian Jared Diamond in his best-seller *Guns, Germs, and Steel*.⁶ The chapter on Africa applies his argument that ‘farmer power’ provided a competitive advantage in early world history. Like other writers before him, Diamond argues that food production was the major advantage of the ‘Bantu Expansion’. His reference to ‘races’ in this chapter deserves comment. In contrast to the social science literature he cites, ‘Bantu-speakers’ become ‘blacks’ and ‘Khoisan’ - properly a term for a language group - denotes a race. Evidence of fluid interactions between people of different groups in early Africa refutes this account of racially defined populations expanding across the continent over time. Furthermore, the racial groups he uses are the result of a long process of colonial classification that was at best arbitrary and at worst intended to reinforce white supremacy.⁷ More recently Diamond and coauthor Peter Bellwood have written an article reformulating the relationship between ‘farmer power’ and language groups rather than races.⁸ The scope of their article is global, showing that all over the world food producers spread new languages at the expense of those spoken by hunter-gatherers, a process long recognized in Africa.⁹

Environment plays a very strong role in the history of the beginnings of food production in the Cape. The territory of the pre-1994 Cape divides neatly into three environmental zones. The first is the subtropical summer rainfall zone arcing counterclockwise along the coast, over Lesotho and across the edge of the Kalahari in the north. The second is the arid interior, bounded by the summer rainfall arc in the east and north and coastal mountain ranges in the south and west. In this dry interior the summer and winter rainfall zones intersect, although very little rain falls in either season. Third is the southern and southwestern coastal zone, which has a temperate climate and winter (Mediterranean) rainfall. These divisions explain the geography of food production in the subcontinent. Bantu-speaking mixed farmers established themselves and incorporated previous inhabitants in the summer rainfall areas, where they could grow the crops, especially sorghum, domesticated in tropical Africa. Because they could not farm without sufficient summer rain, agropastoralists were blocked from settling in the drier interior and coastal winter rainfall zones.

In the Western Cape and dry interior, the agropastoralism prevalent in tropical Africa and the Eastern Cape did not establish itself. Those areas remained home to hunter-gatherers and herders who could take advantage of winter rain or survive with little rain at all. While Khoikhoi herded stock introduced from the north, the Western Cape was isolated from other winter rainfall areas with domes-

-
6. J. Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton and Company, 1997), 376-401.
 7. M. Hall, *The Changing Past: Farmers, Kings and Traders in Southern Africa, 200-1860* (Cape Town: David Philip, 1987), 17-19. See also S. MacEachern, ‘Genes, Tribes, and African History,’ *Current Anthropology*, vol. 41, 2000.
 8. J. Diamond and P. Bellwood, ‘Farmers and Their Languages: The First Expansions,’ *Science*, vol. 300, 2003.
 9. See for example L. Thompson, *A History of Southern Africa* (New Haven: Yale University Press, 1990), 1-30.

ticated crops. Of course, today it is an agricultural centre, but Diamond avers that cultivation never developed in places like the Western Cape because they simply lacked the species suitable for domestication.¹⁰ Additionally, populations never grew large enough to provide an impetus for beginning cultivation. Through the process of human settlement, the Western Cape became an anomaly in Africa, a place where older pastoral and foraging lifeways remained better adapted than the newer agropastoral tradition. Although it received ample rainfall, because it fell in winter and supported only foraging and herding, populations were lower in the Western Cape than in areas where cultivation provided a larger food supply. This would be portentous.

Environments of European Expansion

The comparative environmental history of settler societies has been a productive field. Its questions engage the problem of how settlers from Europe came to establish themselves in certain regions on other continents, and the subsequent ways they interacted with the environment. This brings up deep history on a global scale. The two most popular works of environmental history, Diamond's *Guns, Germs, and Steel* and *Ecological Imperialism* by Alfred Crosby, offer explanations for Europe's ability to expand onto other continents. Neither stops off for long in the Cape, but they give insight into characteristics of settler societies that illuminate their histories. Diamond aims to explain the relative levels of development on different continents. As he explains it, there was nothing superior about Europe or its people - except their location. They were well placed to borrow technology and complex institutions from across Eurasia and to acquire immunities from its diseases. These advantages allowed Europe to expand and dominate others.¹¹ Crosby is more interested in exploring environmental aspects of the process of expansion. He explains that Europeans were able to settle only in areas where they could successfully unpack their 'portmanteau biota' of domesticated animals and plants and germs. Because the plants and animals were adapted to the temperate zone, their people settled more easily there. Because of the length of human habitation, Eurasia and Africa had more complex disease environments than the New World did. Thus, North America, the southern cone of South America, Australia, and New Zealand became 'lands of demographic takeover', or 'neo-Europes', but tropical Africa and Asia with their unfamiliar diseases of people and animals, high populations, and inhospitality to wheat and rye, were 'within reach, beyond grasp' to Europeans.¹²

A comparison of the levels of domination by the Spanish and Portuguese in Latin America and Africa encapsulates the difference between tropical Africa and the New World in the early modern period. The Spanish *conquistadors* with their astounding victories over the Aztecs and Incas have become symbols of the overwhelming power of European invaders, while the Portuguese were not able to

10. Diamond, *Guns, Germs, and Steel: The Fates of Human Societies*, 147-50 and 61-4.

11. *Ibid.*

12. A. Crosby, *Ecological Imperialism: The Biological Expansion of Europe* (New York: Cambridge University Press, 1986). On European construction of the tropics as the unhealthy other, see D. Arnold, *The Problem of Nature: Environment, Culture and European Expansion* (Oxford: Blackwell Publishers, 1996), 149-59.

maintain rule over the Mutapa kingdom. Many factors weakened the Portuguese, but the diseases of the Zambezi valley, both of horses (trypanosomiasis) and humans (malaria), prevented them from gaining military superiority or demographic stability. In tropical Africa, the Portuguese survived by adapting to African ways and by intermarrying rather than conquering.¹³

Neither Diamond nor Crosby has much to say about European settlement in southern Africa.¹⁴ All the same, laying these explanations over the map of the Cape shows environmental forces to be central to the entry of Europeans into the region. As they set out on their explorations and expansion, the diseases of tropical Africa such as malaria, to which Africans had more immunity, repelled them.¹⁵ Subtropical zones such as the Eastern Cape had fewer repelling diseases than areas to the north, but they were too densely populated with agropastoralists for Europeans to displace their inhabitants. The sparsely populated, temperate Western Cape was strategically placed on the sea route between Europe and Asia for a refreshment station. It was welcoming to wheat and vines and was free of tropical diseases. Smallpox, introduced by Europeans, extracted a high mortality from the indigenous population. The Cape thus became a foothold for Eurasians, and their plants and animals. A reasonable but unprovable assertion is that if the tip of the continent of Africa fell on a line of latitude somewhat northward, the course of African history would be very different. Still, the European foothold was small and freely accessible to people in subtropical zones, who immigrated to the region. Therefore, the Cape did not become a neo-Europe on the scale of New Zealand, Australia, Argentina, or North America.

Environmental Zones and Colonial Frontiers

Europeans, or more specifically the burghers living under the administration of the Dutch East India Company (VOC), did not remain confined to the winter rainfall zone, but increased the size of their foothold into the drier interior, where they displaced the indigenous inhabitants. The historiography of the Cape frontier long predates the development of explicitly environmental approaches to the analysis of the past, but writers who do not define themselves as environmental historians have found it necessary to show the influence of environmental forces to explain historical development.

When the colony was established in 1652 the VOC envisioned a limited settlement based on intensive cultivation. Intensive production was not viable, however, because of challenges of environmental adaptation, economic hardship, labour shortages and the land policy of the VOC. As demonstrated by Khoikhoi herders, stock keeping was more attractive, and freeburghers took it up instead, trading with and stealing from the Khoikhoi to acquire environmentally adapted

13. M. Newitt, *A History of Mozambique* (Bloomington: Indiana University Press, 1995), 53-60, 79f; G. Brooks, *Eurafricans in Western Africa: Commerce, Social Status, Gender, and Religious Observance from the Sixteenth to the Eighteenth Century* (Oxford: James Currey, 2003); Allen Isaacman, *Mozambique: The Africanization of a European Institution; the Zambesi Prazos, 1750-1902* (Madison: University of Wisconsin Press, 1972).

14. John McNeill has cited a personal communication from Crosby stating that he steered away from South Africa because it was 'too complicated'. J. McNeill, 'Environment and History in South America and South Asia,' in Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*, 246.

15. P. Curtin, 'Epidemiology and the Slave Trade,' *Political Science Quarterly*, vol. 83, 1968.

breeds. A more extensive land use, stock keeping was responsible for the boundaries of the colony moving more rapidly and further than the VOC envisioned. In the first decades of the eighteenth century freeburghers gained the right to establish stock farms beyond the mountains in the interior. In this drier environmental zone, stock keeping became more an imperative than a preference. While a core of richer settlers, their slaves, and dependent Khoikhoi labourers maintained farms in the winter rainfall district, the bulk of the colonial population shifted by the mid-eighteenth century to the drier interior, where pastoralism and hunting provided most of their subsistence.¹⁶ While Europeans created North American and Southern African frontiers at roughly the same time, Leonard Thompson and Howard Lamar explain much of the divergent development through the very different environments in the eastern United States and the Cape.¹⁷

Most of the eighteenth century Cape was characterized by what Herman Giliomee has described as an 'open' frontier, an area disputed by competing groups. The groups were colonial settlers, including Europeans known as 'trekboers' and Griqua creoles; San; Khoikhoi (some of whom also emigrated from the Cape); Xhosa in the east; and Sotho-Tswana in the north. By the last decade of the century, the frontier entered a crisis. One factor was that colonists on the eastern frontier finally encountered agropastoralists, specifically Xhosa-speakers, who blocked their expansion. With their growing populations, it was no longer possible for trekboers to continue extensive production, but neither could they afford to intensify.¹⁸ The takeover of the Cape by Great Britain in 1806 and subsequent immigration of English settlers added pressure. The importance of environmental conditions to the crisis and conflicts on the eastern frontier should not be underestimated. As the semi-arid interior filled with immigrants who were not able to move further east, settlers found an outlet in Natal and the highveld plateau of the Orange Free State and Transvaal. Taking advantage of political and demographic upheaval among agropastoralists in the early nineteenth century, people with at least some European ancestry established themselves beyond the Cape Colony, but they were not able to achieve demographic dominance in these subtropical environments.

The early history of the Cape frontier enhances our understanding of the environments of European expansion. While the global environmental histories by Crosby and Diamond suggest why Europeans were able to settle where they did, they do not explain why they wanted to or how they established themselves on the ground. With their emphasis on biology, both works reveal new dynamics of development, migration, and conquest, but they might be taken to suggest the existence of an environmental and demographic vacuum in the neo-Europes that pulled

16. P.J. van der Merwe, *The Migrant Farmer in the History of the Cape Colony, 1657-1842*, trans. Roger Beck, 1995 English translation ed. (Athens, Ohio: Ohio University Press, 1938); L. Guelke, 'Freehold Farmers and Frontier Settlers, 1652-1780,' in R. Elphick and H. Giliomee, eds., *The Shaping of South African Society, 1652-1840* (Middletown, Connecticut: Wesleyan University Press, 1988).

17. L. Thompson and H. Lamar, 'The North American and Southern African Frontiers,' in *The Frontier in History: North America and Southern Africa Compared* (New Haven: Yale University Press, 1981), 14-40, see especially 15-16. This volume presents parallel essays on many aspects of the colonial frontiers in both places, but the piece cited is the only explicit comparison.

18. H. Giliomee, 'The Eastern Frontier, 1770-1812,' in Elphick and Giliomee, eds., *The Shaping of South African Society, 1652-1840*.

Europeans into new territory.¹⁹ In fact, to understand the environmental history of European expansion, we must remind ourselves that in addition to being a force in history, the environment was a resource. Europeans chose to expand because they found value in the environments of the neo-Europes. Of course, indigenous people also valued their environments and resisted the incursion. The process of settlement by Europeans was more violent than biologically minded histories indicate. Notably, historians of the Cape frontier Leonard Guelke, Robert Shell, and Laura Mitchell have exposed the violence over water sources and other valuable places.²⁰ We also see that human culture played a role in the encounter between European immigrants and new landscapes. Jill Payne has shown that English settlement was shaped by experience in England, expectations about natural conditions in their new homes, and the reality of the environment in the Eastern Cape. The result involved changes to the environment and new patterns of production as settlers adapted to what was desired and what was possible.²¹

Environmental Changes in Settler Societies

European explorations and expansion involved more than a transfer of environmentally appropriate real estate. They also launched environmental transformations. Several useful works that provide points of comparison between the environmental history of South Africa and other settler societies are *Environment and History*, a book comparing the environmental histories in South Africa and the United States; *Ecology and Empire*, a collection of essays on the environmental history of settler societies; and *South Africa's Environmental History*, which includes several comparative essays.²² Historical research on the process of settlement and resultant environmental transformation in the Cape and elsewhere has been useful and enlightening. Yet, the history of the Cape suggests that founding settler societies might be more difficult than sometimes understood.

Green Imperialism by Richard Grove does not compare the Cape with the usual neo-European suspects, but with the small islands that were among the first territories claimed by Europe in the seventeenth century. (Grove makes a case that the Cape peninsula and its winter rainfall qualify it as an honorary island.) Grove sees common processes in environmental crises in these small, fragile environments and charts the origins of environmental protection to European experiences on St. Helena, the Cape, and Mauritius, and in the Caribbean. Europeans compared these islands to Eden, but they soon recognized degradation on them. Fearing irreversible climate change, Europeans formulated their first conservationist policies on these small outposts. At the Cape, environmental protection began in the eight-

-
19. T. Griffiths, 'Ecology and Empire: Towards an Australian History of the World,' in T. Griffiths and L. Robin, eds., *Ecology and Empire: Environmental History of Settler Societies* (Edinburgh: Keele University Press, 1997), 3-4. An interesting discussion of this issue is found in K. Middleton, 'The Ironies of Plant Transfer: The Case of Prickly Pear in Madagascar,' in W. Beinart and J. McGregor, eds., *Social History and African Environments* (Oxford: James Currey, 2003).
 20. L. Guelke and R. Shell, 'Landscapes of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652-1780,' *Journal of Southern African Studies*, vol. 18, 1992; L. Mitchell, 'Traces in the Landscape: Hunters, Herders and Farmers on the Cedarberg Frontier, South Africa,' *Journal of African History*, vol. 41, 2002.
 21. J. Payne, 'British Colonialism and Landscape Change in the South African *Zuurveld* during the 19th Century,' (2002).
 22. Griffiths and Robin, eds., *Ecology and Empire: Environmental History of Settler Societies*; Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*.

eenth century under the VOC, which issued regulations to preserve forests and grew useful species in the Cape gardens. These experiments led to more effective protections elsewhere. Eden, after all, was a garden, and this early environmentalism sought a prudently tended landscape rather than a wilderness.²³

The ecological impact of European expansion continued in the following centuries. The endangerment, decimation, and extinction of wild fauna, which built to a crisis in the nineteenth century, were highly visible aspects of the environmental transformation in the Cape. More than some other subjects, the history of modern hunting supports comparisons along both latitudes and longitudes because, although Europeans could not settle in large numbers in the tropics, they could pass through and have an impact as hunters. Furthermore, indigenous people in both the tropics and temperate zones connected to global markets for hides, furs, and horns. John MacKenzie has outlined the history of hunting and animal conservation in British colonies in Africa, including the Cape, and India. Africans, of course, had always hunted, but MacKenzie charts the increasing impact of hunting during white settlement. Elsewhere in Africa, trypanosomiasis and the wild animals that harboured it provided a joint defense against white settlement, but the absence of the disease in the Cape left its fauna more exposed. Hunting wild animals provided meat and selling them provided money, sustaining the expanding colonial frontier, and the establishment of farms prevented their recovery. By the nineteenth century, the Cape became a centre for commercial hunting for the international market and sport hunting by the international elite. Consequently, the Cape foreshadowed overexploitation elsewhere with a general depletion of wildlife in the territory, including the extinction of two species, the blue antelope and the quagga. By the end of the nineteenth century, the process of 'asset-stripping', as MacKenzie calls it, was widespread in southern Africa. MacKenzie identifies trends in hunting and conservation emanating from the Cape into colonial Africa and India.²⁴ *Environment and History*, by William Beinart and Peter Coates, highlights the history of hunting in its comparison between South Africa and the United States. The authors show many similarities, including the heavy demand for both beavers and ostriches for European headdresses, the near-extirmination of the bison and the elephant, and the animus in both places between stock farmers and those canine cousins, the coyote and jackal.²⁵

The project of eradicating 'vermin' sustains its own international comparisons. On insects, Karen Brown has shown scientific connections between entomologists in South Africa, the United States, and Australia.²⁶ Articles by Beinart and Lance van Sittert have shown that the destruction of jackals was necessary to domesticate the landscape in the service of white farmers, in particular the English settlers who turned to commercial wool production with exotic breeds. Jackals were adept predators of sheep and complete victory against them eluded Cape

23. R. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (Cambridge: Cambridge University Press, 1995). On the Cape, see 133-52.

24. J. MacKenzie, *The Empire of Nature: Hunting, Conservation and British Imperialism* (Manchester: Manchester University, 1988).

25. W. Beinart and P. Coates, *Environment and History: The Taming of Nature in the USA and South Africa* (London: Routledge, 1995), 17-33.

26. K. Brown, 'Political Entomology: The Insectile Challenge to Agricultural Development in the Cape Colony, 1895-1910,' *Journal of Southern African Studies*, vol. 29, 2003.

farmers. At the turn of the twentieth century, farmers settled for excluding them with fencing.²⁷ We see in Cape history that immigrants contended with not only the indigenous people but also the indigenous biota.

The process of expansion by European settlers also transformed flora. As early as 1863, John Croumbie Brown, the first official botanist of the Cape Colony, pointed this out. The message was impolitic and Brown's post was abolished.²⁸ Van Sittert has detailed a growing appreciation for indigenous flora of the Western Cape, generally known as 'fynbos' among the English-speaking middle class in the early twentieth century. This group lobbied for floral reserves that provided some protection for fynbos.²⁹ Despite this, the unique vegetation has been lost at an alarming rate due to clearing for farms and vineyards, displacement by introduced species, and the expansion of the human population. Yet studies of vegetation change centre on the interior, not the Western Cape, and historians and biologists are cautious about asserting what changes have taken place. In an influential article, biologists Timm Hoffman and R.M. Cowling describe field studies in the Karoo that suggest cyclical patterns of change rather than the unilinear degradation that is widely understood to have occurred.³⁰ Exploring the technological refurbishment of the Karoo landscape for sheep farming, Sean Archer is aware that his evidence does not allow for easy conclusions about the environmental impact.³¹ In South Africa, ecological changes were subtler than the felling of the eastern American forests.³²

Drawing more upon available documentation, van Sittert has also researched botanical change in the Cape interior. He, too, is hesitant about proposing a definitive history of botanical change, in this case of invading species. Rather, he presents a rich historical context, laying out social, cultural and political issues in the spread of noxious weeds and prickly pear (*Opuntia ficus-indica*). The effect is to refine our understanding of the ecological transformations in settling societies. Van Sittert tempers Crosby's argument that the 'portmanteau biota', including weeds, provided a handy toolkit for European expansion. Prickly pear was sometimes appreciated and sometimes excoriated, depending on the time, place, and economic interests of the interlocutor. Furthermore, the eradication of those weeds more consistently considered detrimental and aggressive was subject to local politics. Unable to enforce compliance, the state engaged instead in propaganda to enlist farmers in the fight against weeds.³³ As with the war on the jackal, histories of the Cape show that the biological expansion of Europe was not a walk in the park.

-
27. W. Beinart, 'The Night of the Jackal: Sheep, Pastures, and Predators in South Africa, 1900-1930,' *Past and Present*, vol. 158, 1998; L. van Sittert, "'Keeping the Enemy at Bay": The Extermination of Wild Carnivora in the Cape Colony, 1889-1910,' *Environmental History*, vol. 3, 1998.
 28. R. Grove, 'Scottish Missionaries, Evangelical Discourses and the Origin of Conservation Thinking in Southern Africa, 1820-1900,' *Journal of Southern African Studies*, vol. 15, 1989, 172-82.
 29. L. van Sittert, 'From "Mere Weeds" and "Bosjes" to a Cape Floral Kingdom: The Re-Imagining of Indigenous Flora at the Cape c. 1890-1939,' *Kronos*, vol. 28, 2002.
 30. M. Timm Hoffman and R.M. Cowling, 'Vegetation Change in the Semi-Arid Karoo over the Last 200 Years: An Expanding Karoo - Fact or Fiction?', *South African Journal of Science*, vol. 86, 1990.
 31. S. Archer, 'Technology and Ecology in the Karoo: A Century of Windmills, Wire and Changing Farming Practice,' in Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*.
 32. Beinart and Coates, *Environment and History: The Taming of Nature in the USA and South Africa*, 34-50.
 33. L. van Sittert, "'The Seed Blows About in Every Breeze": Noxious Weed Eradication in the Cape Colony, 1860-1890,' *Journal of Southern African Studies*, vol. 26, 2000; L. van Sittert, "'Our Irrepressible Fellow Colonist": The Biological Invasion of Prickly Pear (*Opuntia ficus-indica*) in the Eastern Cape, 1890-1910,' in Dovers et al, *South Africa's Environmental History: Cases and Comparisons*.

A less-analyzed aspect of environmental change in the Cape is the marine environment. Van Sittert is the only environmental historian to have considered the history of fishing. In an article on the crayfish canning industry, he has explored the workings and impact of commercial fishing off the west coast. The interest of capital in open access undermined preservationist efforts, until eventually conservation was implemented to protect capitalist exploitation as well as the fish. By the 1940s, crayfish conservation consisted of controlling which individual fishermen and processing companies had access to the fish rather than regulating the ways they drew upon the resources.³⁴ The influence of capitalism echoes circumstances in other settler societies, while providing a significant contrast to the coercive conservation on black reserves and in tropical African colonies at the same time.

Environmental change created another aspect of the human-environment nexus: conservation. Overhunting and extinction of wildlife were the most pressing conservationist concerns, and the consequent creation of game reserves and national parks was the most prominent form of conservationism in Africa. Influenced by the foundation of national parks in the United States,³⁵ lawmakers the world over became aware of the need for animal preservation, but for the Cape it was nearly too late.³⁶ South Africa's premier game parks are in areas where the summer rainfall environment provided effective wildlife protection by hampering European settlement. In the Cape, wildlife was already depleted as conservation gained support, and the political strength of the farming lobby caused the state to deproclaim and curtail parks.³⁷ The extremely arid far north of the province was less attractive to white farmers and was spared the overhunting that took place in most of the province. Thus, the largest park in the Cape Province, the Kalahari Gemsbok National Park, was created there. Carruthers has written on the park, the initial accommodation, eventual exclusion, and post-1994 reintegration of the San who lived there. She finds parallels with the Uluru-Kata Tjuta National Park in Australia, where Aborigines have a presence and even some exclusive rights.³⁸ Another parallel is in the Central African Republic, where Aka 'pygmies' have been more willingly accommodated in the Dzanga-Ndoki National Park.³⁹ In all these cases, it proved easier for conservationists to accept hunter-gatherers in protected spaces than the cultivators and herders who populate most of tropical Africa.

Wildlife conservation in the Cape was adapted to local conditions and politics, Karen Brown has shown, including class discrimination against hunting among poor whites. But as would be the case elsewhere on the continent, Africans were portrayed as wastrels from whom animals needed protection.⁴⁰ This reso-

-
34. L. van Sittert, "'More in the Breach Than in the Observance": Crayfish, Conservation and Capitalism, c. 1890-c. 1939,' *Environmental History Review*, vol. 17, 1993.
 35. R. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley: University of California, 1998), 15-34.
 36. MacKenzie, *The Empire of Nature: Hunting, Conservation and British Imperialism*, 115-6, 219-20, 31-3.
 37. K. Brown, 'Cultural Constructions of the Wild: The Rhetoric and Practice of Wildlife Conservation in the Cape Colony at the Turn of the Twentieth Century,' *South African Historical Journal*, vol. 47, 2002.
 38. J. Carruthers, 'Past and Future Landscape Ideology: The Kalahari Gemsbok National Park,' in Beinart and McGregor, eds., *Social History and African Environments*.
 39. T. Giles-Vermick, *Cutting the Vines of the Past: Environmental Histories of the Central African Rainforest* (Charlottesville: University Press of Virginia, 2002), 45-6.
 40. Brown, 'Cultural Constructions of the Wild: The Rhetoric and Practice of Wildlife Conservation in the Cape Colony at the Turn of the Twentieth Century'.

nates with the works of many historians that portray the history of national parks in Africa as one of exclusion of and at times violence against those who live near them. These works include those by Jane Carruthers on the Kruger National Park in the Transvaal, Terence Ranger on the Matopos National Park in Zimbabwe, Rod Neumann on Arusha National Park in Tanzania, and Tamara Giles-Vernick on protected areas in the Central African Republic.⁴¹ Actually, this has parallels along lines of latitude as well. As the work of Karl Jacoby reveals, parks in the United States have a 'hidden history' of excluding Native Americans and poor whites.⁴²

Conservation in the late twentieth century involved more than national parks. In the mid-twentieth century, an environmental movement began in civil society of northern democracies. Thomas Dunlap has written a comparative account of popular understandings of nature in the Anglophone world from the mid-nineteenth through the late twentieth century, but he does not include South Africa in the cohort of 'the English Diaspora'.⁴³ The comparison may have been hard to sustain throughout the period of study. After the 1960s, other problems and causes captured the attention of white South Africans, and the agenda of environmental protection was far removed from the concerns of blacks.⁴⁴

The environmental history of white settlement at the Cape provides material for comparisons with that of other settler societies in two ways. While mainstream historians have frequently noted environmental forces in Cape history, writers identifying with an explicitly environmental position have more frequently detailed the other side of the human-environmental partnership - environmental changes accompanying European settlement. While this history of the reciprocal human-environmental partnership under white settlement is important, there is more to the history of the pre-1994 Cape than its neo-European tendencies. Its history cannot be isolated from that of South Africa as a whole, whose similarities with settler societies are weaker than are those of the Cape alone. Extracting the Cape from the national context involves downplaying important forces in its history. Furthermore, a very high proportion of the Cape population today identifies with African societies that were never displaced by European immigrants. This group has steadily increased in number in all areas of the pre-1994 Cape, but on the eastern and northern borders of the territory, their ancestors made the establishment of a neo-Europe impossible. The latitudinal perspective does not reveal this history.

Environmental Change under Colonialism in Tropical and Sub-Tropical Africa

The environment of the Western Cape is unique in sub-Saharan Africa, making it possible for this area, more than any other on the continent, to become a

41. J. Carruthers, *The Kruger National Park: A Social and Political History* (Pietermaritzburg: 1995); Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*; Giles-Vernick, *Cutting the Vines of the Past: Environmental Histories of the Central African Rainforest*.

42. K. Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley: University of California, 2001).

43. T. Dunlap, *Nature and the English Diaspora* (New York: Cambridge University Press, 1999).

44. Beinart and Coates, *Environment and History: The Taming of Nature in the USA and South Africa*, 93-111.

neo-Europe. Still, South Africa as a whole and even the pre-1994 Cape encompass more than this exceptional environment and exceptionally large white presence.⁴⁵ As valid as the comparisons between the Cape and neo-Europes elsewhere are, a position that overemphasizes South African or Cape exceptionalism in Africa overlooks the history and historical roots of the majority of the population.⁴⁶ The political and intellectual problems with this position are obvious. The question of how the Cape fits into modern African environmental history is just as important as - but unfortunately more difficult to answer than - the question of how it fits into the environmental history of settler societies. It has become a truism in Africanist history that people exercise agency, but precise descriptions of environmental agency vary according to environmental conditions, making generalizations difficult. As noted above, one common characteristic of African environmental history is that disease and robust agropastoral populations created a barrier against significant European settlement in tropical Africa, except in highland regions. Beyond that, it is difficult to generalize about common processes and forces in the diverse environments.

Common processes may underlie the human impact on the African environment, but assessing and explaining environmental change in tropical Africa poses challenges. As we have seen, the major theme of Cape environmental history has been the environmental change accompanying white settlement, but it is difficult to conceptualize a parallel 'taming of nature' in recent centuries in areas without white settlement.⁴⁷ If historians describe ecological change in the winter-rainfall and semi-arid zones of the Cape as a challenging but largely successful process of domestication by European immigrants, in tropical Africa they stress the negative ecological changes under colonialism. Most notably, an early (1977) and influential contribution to the field by Helge Kjekshus argued that colonial annexation in Tanzania brought environmental catastrophe where there had been effective control.⁴⁸ Although Kjekshus's argument is extreme, it resonates with developments elsewhere in Africa. For example, in the summer rainfall areas of the Cape, environmental change did accompany the late-nineteenth-century 'Scramble for Africa'. Environmental trauma weakened Africans' resistance and worked to the advantage of Europeans.⁴⁹

We, however, must be wary of making a generalization that environmental catastrophe colonialism is the major unifying theme of African environmental history. MacKenzie has insightfully commented on the 'apocalyptic school' that 'views world history as one long free fall, with imperialism as its global accelerator.'⁵⁰ As is often observed about Kjekshus's work, the colonialism-as-global-apocalypse viewpoint can be naïve about levels of environmental control and change

45. It is important to recognize that even the leading neo-Europes have turned out to be more diverse and multicultural than old Europe. Griffiths, 'Ecology and Empire: Towards an Australian History of the World.'

46. T. Ranger, 'Review of *Environment and History, The Taming of Nature in the USA and South Africa* by William Beinart and Peter Coates,' *Journal of Southern African Studies*, vol. 22, 1996.

47. The reference is to the title of Beinart and Coates, *Environment and History: The Taming of Nature in the USA and South Africa*.

48. H. Kjekshus, *Ecology Control and Economic Development in East African History* (Athens: Ohio University Press, 1996).

49. See for example, N. Jacobs, 'The Colonial Ecological Revolution in South Africa: The Case of Kuruman,' in Dovers et al, *South Africa's Environmental History: Cases and Comparisons*; N. Jacobs, *Environment, Power, and Injustice: A South African History* (New York: Cambridge University Press, 2003), 96-116.

50. J. MacKenzie, 'Empire and the Ecological Apocalypse: The Historiography of the Imperial Environment,' in T. Griffiths and L. Robin, eds., *Ecology and Empire: Environmental History of Settler Societies*, 220.

in precolonial Africa.⁵¹ Furthermore, the tendency to stress the rupture of imperial annexation sometimes forestalls an examination of resiliency to environmental change in colonial Africa. Those articulating the narrative of environmental trauma and colonial annexation should take care not to lose sight of environmental challenges in precolonial Africa or continuing traditions of environmental management in colonial Africa.⁵²

A school of writing that emerged in the 1990s has made the point that descriptions of decline may rest on the colonial presumption that the African environment was degraded and that it required urgent and drastic intervention, regardless of the costs to the inhabitants. This degradation-wary school, best represented in the essays in the edited collection *The Lie of the Land*, exposes unjustified assumptions and questionable science behind narratives of ecological disaster in Africa.⁵³ These writers also argue that indigenous environmental knowledge could withstand colonial pressure and protect the environment. Most notably, James Fairhead and Melissa Leach show that residents of the forest-savanna mosaic in Guinea valued trees, fostered their growth with time-honed techniques, and were able to continue these practices under colonial rule.⁵⁴ Influenced by such work, environmental historians have taken pains not to perpetuate the stereotype of a declining African environment. They realize that careful definitions of degradation are necessary to demonstrate environmental trauma at the point of colonial annexation, as well as longer-term environmental decay under colonial rule. Environmental disruption during colonial annexation and under colonial rule was widespread, but historians must strive for a more nuanced understanding than an apocalypse or inexorable decline, being cautious about what constitutes decline, what the impact is on people, and to what extent colonialism caused the changes. At the same time, they must be wary of overcorrecting the colonial narrative and denying environmental degradation.⁵⁵ Neither should they underemphasize the political and economic pressures that made it difficult to continue traditional environmental management.

In addition to the challenge of evaluating environmental change, historians face a basic methodological challenge in reconstructing it, because the old problem of sparse sources for early African history also complicates environmental research. When thick description of past environments and their inhabitants is not possible, historians reconstruct them through informed speculation, based on their understanding of current environments, ecological processes, as well as human needs and preferences.⁵⁶ In an influential 1977 article, Leroy Vail used such meth-

51. J. Iliffe, 'Review of Helge Kjekshus, *Ecology Control and Economic Development in East African History*,' *Journal of African History*, vol. 19, 1978, 140-1; J. Giblin, 'Trypanosomiasis Control in African History: An Evaded Issue?', *Journal of African History*, vol. 31, 1991, 67.

52. G. Maddox, "'Degradation Narratives" and "Population Time Bombs": Myths and Realities about African Environments,' in Dovers et al., *South Africa's Environmental History: Cases and Comparisons*.

53. Good examples are the essays in M. Leach and R. Mearns, eds., *The Lie of the Land: Challenging the Received Wisdom on the African Environment* (Oxford: James Currey, 1996). See also the first synthesis of African environmental history J. McCann, *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800-1990* (Portsmouth, New Hampshire: Heinemann, 1999).

54. J. Fairhead and M. Leach, *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic* (Cambridge: Cambridge University Press, 1996).

55. Examples include D. Anderson, *Eroding the Commons: The Politics of Ecology in Baringo, Kenya 1890-1963* (Oxford: James Currey, 2002); Jacobs, *Environment, Power, and Injustice: A South African History*.

56. An excellent example is R. Harms, *Games Against Nature: An Eco-Cultural History of the Nunu of Equatorial Africa* (New York: Cambridge University Press, 1987).

ods to postulate a significant increase in tsetse-infested areas and the incidence of trypanosomiasis in eastern Zambia after the 1850s. Vail's argument differed from Kjekshus's (of the same year) in an important regard: while Kjekshus envisioned a breakdown of ecological control through colonial forces alone, Vail traced the beginnings of environmental change to new settlement patterns in reaction to Ngoni immigration. (Colonial interventions gave further advantage to tsetse and trypanosomiasis.)⁵⁷ His acceptance that environmental decline can occur through African agents has spared him some of the criticisms applied to Kjekshus, but John McCracken has raised the points that Vail may be overly influenced by negative stereotypes of the Ngoni and that their population was too small to have a great environmental impact.⁵⁸ The paucity of sources requires that historians rely heavily on deduction to postulate environmental change. Well-informed speculation is preferable to silence, but as with any deduction, the premises are open to questioning. It is especially difficult to sustain reconstructions with scanty evidence over a large and diverse area. This works against broad generalizations about environmental change across Africa. That said, the history of environmental change, the forces causing it, and the ways people react to it are necessary topics for further comparative research and continent-wide synthesis.

A Bifurcated Environment, Society, and State in the Twentieth Century

Because of environmental diversity and the variation in the colonial impact, a longitudinal African view of the modern human-environmental partnership resembles a mosaic with a subtle pattern. To bring order to the mosaic, it helps to focus on the 'distinctive historical context' of the 'human-environment nexus'. In twentieth-century Africa, the governance of Africans as tribal subjects provides a common historical context that can aid comparative work within Africa. Environmental historians should consider the work of Mahmood Mamdani in *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*, who makes the point that the existence of a civil sphere for the racial or urban elite and relegation of rural masses to a tribal, 'customary' existence unites the history of apartheid with that of colonial rule elsewhere in Africa.⁵⁹ Critics have pointed out exceptions to Mamdani's universalizing argument and problems with his assertions about the colonial impact.⁶⁰ Furthermore, as Beinart has noted, the field of South African environmental history is already well aware of the importance of the state,⁶¹ but Mamdani's theory offers environmental historians an understanding of what about the character of the state and governance opened rural Africans to compulsions and violence: the colonial definition of the African subject. His

57. L. Vail, 'Ecology and History: The Example of Eastern Zambia,' *Journal of Southern African Studies*, vol. 3, 1977.

58. J. McCracken, 'Conservation and Resistance in Colonial Malawi: The "Dead North" Revisited,' in Beinart and McGregor, eds., *Social History and African Environments*. McCracken refers to Vail's work on the history of northern Malawi rather than the piece on Zambia summarized here, but the point is applicable.

59. M. Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton: Princeton University Press, 1996), 28, 62-102.

60. B. O'Laughlin, 'Class and the Customary: The Ambiguous Legacy of the Indigenato in Mozambique,' *African Affairs*, vol. 99, 2000; F. Cooper, 'Review of *Citizen and Subject*,' *International Labor and Working Class History*, vol. 52, 1997.

61. W. Beinart, 'South African Environmental History in an African Context,' in Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*.

observation accounts for the similarities in intervention into the human-environmental partnership throughout southern, eastern, and central Africa. Although Mamdani's interest is not environmental, his analysis is germane to environmental history and can serve as a counterweight to impressions of Cape environmental exceptionalism.

Governance through indirect rule was pivotal to tribal status. Because the Cape Colony and Province were ruled both directly and indirectly, both tendencies merit discussion. The primary characteristic of direct rule is that government administrators ruled indigenous people under colonial law. Its associated characteristics may include paternalism, individual tenure, and the forced assimilation of indigenous people into colonial working classes. Direct rule was a centralized rather than bifurcated system. The British 'humanitarian' tradition influenced the early nineteenth-century Cape and it subsequently became the longest experiment in direct rule in British Africa. It had a greater European demographic presence, an extent of self-government, promise of some assimilation of the black elite, and more extensive individual tenure.⁶² Nonetheless, even in the mid-nineteenth-century Cape, communal tenure prevailed in Xhosa areas, and as other Africans came under Cape colonial rule, their lands were also held communally.⁶³

In contrast, indirect rule consisted of governance under customary law by chiefs. Its characteristics are communal tenure, territorial segregation, and tribal divisions. The operative difference between direct and indirect rule is governance by magistrates or chiefs. Under indirect rule, however, 'traditional' authorities often drew their authority and power more from the colonial state than from popular legitimacy. Indirect rule became the dominant tendency in Africa in the twentieth century, and in South Africa the formation of the Union of South Africa in 1910 intensified forces against direct rule in the Cape. The system of administration shifted especially after the Native Administration Act of 1927, which standardized administration under chiefs, headmen, and customary law. After the passage of the Native Land and Trust Act in 1936, Africans were prohibited from buying private land and voting in the Cape. Finally, with the implementation of the Bantu Authorities Act in the 1950s, the system had become one of indirect rule under colonial versions of African customary law for Africans, while whites lived under the rule of law and participatory governance.⁶⁴

This matters to environmental history because environmental administration was bifurcated. In the Cape, the bifurcation was environmental in ways not recognized by Mamdani. It largely corresponded to the environmental zones that allowed or impeded European settlement. Settlers who replaced the indigenous inhabitants held the winter-rainfall zone and arid interior as citizens with rights to individual tenure, while Africans occupied reserves communally, as befitted tribal subjects under customary law in the summer-rainfall zone. This is not to say that environmental characteristics caused the bifurcation, but rather that they

62. For information on the history of administration in the mid-nineteenth century, with particular reference to the influence of George Grey in the establishment of direct rule, see J.B. Peires, *The Dead Will Arise* (Johannesburg: Raven, 1989).

63. *Ibid.*; K. Shillington, *Colonisation of the Southern Tswana, 1870-1900* (Johannesburg: Raven, 1985).

64. I. Evans, *Bureaucracy and Race: Native Administration in South Africa* (Berkeley: University of California Press, 1997), 166-70, 224-34.

shaped how it manifested itself. The negotiations around weed eradication or marine conservation in the winter-rainfall zone and arid interior, revealed in the work of van Sittert discussed above, were among the state, business interests, and its individual citizens. There, we see the presence of civil society and civil rights. In contrast, ‘betterment’, the ongoing state intervention into environmental relations on African reserves, was coercive and sometimes violent. Both direct rule and indirect rule made people vulnerable to losing their land (as in the creation of national parks), but the crux of the difference in African environmental history is that indirect rule and communal tenure reduced the ability of colonized subjects to determine what they did with the land they kept. Under indirect rule, communal tenure made everyone vulnerable to a single action by the state and the colonial version of customary law and conception of chiefly authority supported greater coercion and autocracy.⁶⁵

Natural Resource Conservation: Comparisons across Time and Space

The bifurcation between the citizen and subject relations with the environment becomes evident through several comparisons of natural resource conservation. The first involves different levels of racialized intervention when the Cape existed as a colony or as a province in the Union of South Africa. The second involves the connections and similarities between conservation policy among citizens in the United States and South Africa. The third centres on the similarity between the environmental administration of Cape African reserves and colonies in tropical Africa. Contrasted with the environmental administration in the nineteenth-century Cape, among whites in twentieth-century South Africa, or in settler societies elsewhere, the coercion and even violence of environmental policy on reserves in the Cape and in colonies elsewhere in Africa become clear.

On the first comparison, of nineteenth- and twentieth-century environmental administration, it is important not to portray environmental administration of Africans under the Cape Colony in the nineteenth century as benign. Conservation under direct rule could exact a high toll from blacks, as demonstrated by Jacob Tropp’s research on forest and hunting restrictions in the early twentieth-century Transkei. Officials laid strychnine to poison dogs owned by Africans and thus curtail their hunting. In response, rumours among Africans asserted that the government was poisoning them and their children.⁶⁶ All the same, the liberal, assimilationist Cape tradition did offer some promise that blacks and whites would have the same relations with the environment. The work of Farida Khan demonstrates this hope among the elite, assimilation-oriented black farmers who founded the Native Farmers Association (NFA) in 1918. The NFA promoted modern farming methods and argued for equal access to land and credit for black farmers.⁶⁷ Here, too, we see an American connection, but a different sort than is usually found in

65. A good introduction to customary law is M. Chanock, ‘Shaping the Imperial Legal Regime: A Review of the Customary Law of Tenure,’ in K. Mann and R. Roberts, eds., *Law in Colonial Africa* (Portsmouth: Heinemann, 1991).

66. J. Tropp, ‘Dogs, Poison and the Meaning of Colonial Intervention in the Transkei, South Africa,’ *Journal of African History*, vol. 41, 2002.

67. F. Khan, ‘Rewriting South Africa’s Conservation History: The Role of the Native Farmers Association,’ *Journal of Southern African Studies*, vol. 20, 1994.

environmental history - the self-help agrarian message of Booker T. Washington introduced by a black American missionary who helped form the organization.

Environmental administration in the Cape did change as the province came under indirect rule. The change is the same as that Sara Berry observes for Africa in general when she characterizes early conservationist measures as 'preventative' and later as 'interventionist'.⁶⁸ This shift in the Cape is evident in Tropp's comparison of forest policy in the Tsolo District between the periods 1885-1915 and 1950-1964. In the earlier period, Africans were restricted in their access to indigenous forests reserves but resisted the limitation. In the later period, they were removed from their homes to make room for plantations of exotic trees, on land held in 'trust' for Africans. People believed that state interference in the ways they used the land reserved for them was a cause for their hardship.⁶⁹ While the Cape had the longest experiment with direct rule in British Africa, assimilationist and liberal traditions similarly existed and waned in other colonies. Regarding Nyasaland and Southern Rhodesia, Grove concludes that more 'humanistic' conservationism, like that of John Croumbie Brown, could not survive the extreme form of imperialism in settler societies.⁷⁰

The new definition of blacks as subjects of conservation policy is also evident in their organization around environmental issues. The liberal and assimilationist agenda of the NFA became outdated under apartheid and the organization folded in the 1950s.⁷¹ A different sort of mobilization is evident in Khan's work on a second organization, the African National Soil Conservation Association in South Africa, created in 1953 as a black parallel to the whites-only National Veld Trust. Meant to popularize conservation among subjects of betterment, it did not address political circumstances. Its outreach failed because soil conservation had become irredeemable among colonial subjects and because the state made no concessions to win hearts and minds on the issue.⁷²

The second comparison, between civil society conservation in the United States and among white South Africans, is illustrated by the history of soil erosion and conservation. Soil erosion is ubiquitous in histories of settler societies, the Cape, South Africa, and tropical Africa. In addressing the topic, historians have been aware of a problem of determining the level of erosion itself. While archival records decry the problem, it may have been less severe than they believed and been caused by natural processes as well as the human impact.⁷³ Whatever the actual conditions, soil erosion became an international obsession in the 1930s, following

68. S. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison: University of Wisconsin, 1993).

69. J. Tropp, 'Displaced People, Replaced Narratives: Forest Conflicts and Historical Perspectives in the Tsolo District, Transkei,' *Journal of Southern African Studies*, vol. 29, 2003.

70. Grove, 'Scottish Missionaries, Evangelical Discourses and the Origin of Conservation Thinking in Southern Africa 1820-1900,' 186-7.

71. Khan, 'Rewriting South Africa's Conservation History: The Role of the Native Farmers Association'.

72. F. Khan, 'Soil Wars: The Role of the African National Soil Conservation Association in South Africa, 1953-1959,' *Environmental History*, vol. 4, 1997.

73. M. Stocking, 'Soil Erosion: Breaking New Ground,' in *The Lie of the Land: Challenging the Received Wisdom on the African Environment* (Oxford: James Currey, 1996). A cautious approach to reconstructing the history of erosion is found in T. Driver, 'Anti-Erosion Policies in the Mountain Areas of Lesotho: The South African Connection,' *Environment and History*, vol. 5, 1999 and in McCracken, 'Conservation and Resistance in Colonial Malawi: The "Dead North" Revisited.' On using local memories to establish conditions, see K. Showers and G. Malahleha, 'Oral Evidence in Historical Environmental Impact Assessment: Soil Conservation in Lesotho in the 1930s and 1940s,' *Journal of Southern African Studies*, vol. 18, 1992.

the dust bowl on the American Great Plains. The dominant experience of acute erosion was American, and it had influence in South Africa although there were significant differences between the two cases. The main difference involved environmental processes: American conservationists were preoccupied with harmful plowing and wind erosion, while in South Africa the concern was heavy overgrazing that left dongas.⁷⁴ While American technical expertise was applied throughout the continent, the bifurcation of South African society channeled some aspects of the American influence more toward the sphere of white settlers, in the Cape and other provinces. For example, Belinda Dodson has described the impact of a visit by Hugh Bennett, Chief of the United States Soil Conservation Service, in 1944. Traveling 10,000 miles on a two-month visit, he barely made contact with blacks.⁷⁵ Furthermore, Sarah Philips has explained that the resulting improvements to dry farming were restricted to whites and that the 1946 Soil Conservation Act was not considered applicable to reserves.⁷⁶ There were proposals to allow the state to forcefully intervene among recalcitrant white farmers, but in the event, soil conservation among them was implemented through extension, aid, and persuasion.⁷⁷ In Rhodesia, as well, political considerations held conservation among whites in check, while blacks had a more coercive experience of state intervention.⁷⁸

This brings us to the third comparison, between the state response to soil erosion in black-occupied areas of South Africa and other African colonies. It is difficult to determine at what point and under what forces erosion became acute. At any rate, the beginning of soil conservation resulted from factors other than a changing state of the soil. In the Cape, Grove sees increasing official interest in erosion on black reserves under the influence of Social Darwinism after John Croumbie Brown's departure in the 1870s. While Brown had criticized land use by whites and blacks, later allegations about the impact of Africans' land use justified expelling them from forests.⁷⁹ In the case of Lesotho, James McCann has unearthed evidence of erosion before 1900, but no official response.⁸⁰ Herschel, a mountainous area of the Cape, was reported to suffer from erosion by the 1920s.⁸¹ Despite these earlier reports of a problem, throughout Africa, the 1930s were a turning point. The official concern about soil erosion in black-occupied areas, according to William Beinart, developed around white farms in the Cape midlands and was transferred at that time.⁸² Nineteen-thirties Kenya - another colony with

-
74. Beinart and Coates, *Environment and History: The Taming of Nature in the USA and South Africa*, 51-2, 61-3. Australia also suffered acute wind erosion in the 1930s. F. Ratcliffe, *Flying Fox and Drifting Sand* (New York: R.M. McBride, 1938).
75. B. Dodson, 'A Soil Conservation Safari: Hugh Bennett's 1944 Visit to South Africa' (Paper presented to American Society for Environmental Annual Conference Frontiers in Environmental History: 'Mainstreaming the "Marginal,"' Providence, Rhode Island, 29 March 2003).
76. S. Philips, 'Lessons from the Dust Bowl: Dryland Agriculture and Soil Erosion in the United States and South Africa, 1900-1950,' *Environmental History*, vol. 4, 1999.
77. P. Delius and S. Schirmer, 'Soil Conservation in a Racially Ordered Society: South Africa 1930-1970,' *Journal of Southern African Studies*, vol. 26, 2000; M. Stocking, *Journal of Agricultural History*, 1985; M. Stocking, 'Soil Conservation Policy in Colonial Africa,' *Agricultural History*, vol. 59, 1985.
78. I. Phimister, 'Discourse and the Discipline of Historical Context: Conservationism and Ideas about Development in Southern Rhodesia,' *Journal of Southern African Studies*, vol. 12, 1986.
79. Grove, 'Scottish Missionaries, Evangelical Discourses and the Origin of Conservation Thinking in Southern Africa, 1820-1900,' 182-5.
80. McCann, *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800-1990*. On Lesotho, see 141-73.
81. W. Beinart, *The Political Economy of Pondoland* (Cambridge: Cambridge University Press, 1982), 82-3; W. Beinart, 'The Politics of Colonial Conservation,' *Journal of Southern African Studies*, vol. 15, 1989, 143-6.
82. W. Beinart, 'Soil Erosion, Conservationism and Ideas about Development: A Southern African Exploration, 1900-1960,' *Journal of Southern African Studies*, vol. 11, 1984.

many white settlers - as described by David Anderson, shows strong similarities to South Africa.⁸³ In both cases, the science was international, whites' economic interests determined conservation among black farmers, and participation by blacks was compulsory. In Lesotho, a textbook example of acute erosion, the great concern about and early interventions had begun by the 1930s. Thackwray Driver has suggested that particularly after the election of the National Party in 1948, the South African objections to highland erosion silting their rivers and the British colonial attempts to alleviate their concerns were motivated more by the issue of who ruled the country than the state of the environment.⁸⁴

After officials identified the problem of erosion, they needed to decide how to deal with it. In contrast to soil conservation among white South African farmers, the economic circumstances of blacks were not a consideration and aid to finance improved land use was not made available. Rather, officials believed that ignorance and backwardness caused erosion on Africans' land.⁸⁵ The solution, therefore, was not assistance, but enforcement of approved farming methods, and so in the Cape, other regions of South Africa, and colonies in tropical Africa, soil conservation among black farmers entailed coercion.

One difference between South Africa and other British colonies was whether overgrazing or cultivation was the greater target for intervention. Where cultivation caused more worry, in tropical colonies and Lesotho, people were forced to build anti-erosion works and plow according to prescribed rules. In Lesotho, the British pursued engineering schemes to terrace vulnerable hillsides. Oral histories collected by Kate Showers and Gwendolyn Malahleha relate that planners did not consult local people, who believed there was 'no reasoning' with them about the terraces. Local people were paid to work on the projects, but neither the wage nor confidence in the program was high enough to guarantee an adequate workforce. Showers, a soil scientist, holds that government anti-erosion works are responsible for much of the severe erosion visible in Lesotho today. In remote areas of the country, people were able to remove and remake terraces to be less destructive.⁸⁶

The construction of terraces in Tanzania relied on gross levels of physical coercion.⁸⁷ As described in the work of Michelle Wagner, the colonizers' 'strictly communal conception of land and labour' led to women being mobilized through traditional rulers and compelled to perform hard physical labour. Today, people insist that the measures caused food production to drop and hunger to climb.⁸⁸ The situation described in Fiona Mackenzie's work on Kikuyu areas of Kenya was

83. D. Anderson, 'Depression, Dust Bowl, Demography, and Drought: The Colonial State and Soil Conservation in East Africa during the 1930s,' *African Affairs*, vol. 83, 1984.

84. Driver, 'Anti-Erosion Policies in the Mountain Areas of Lesotho: The South African Connection'.

85. McCann, *Green Land, Brown Land, Black Land: An Environmental History of Africa, 1800-1990*, 161-2; Delius and Schirmer, 'Soil Conservation in a Racially Ordered Society: South Africa, 1930-1970'.

86. K. Showers, 'Soil Erosion in the Kingdom of Lesotho: Origins and Colonial Response, 1830s-1950s,' *Journal of Southern African Studies*, vol. 15, 1989;vtvz Showers and Malahleha, 'Oral Evidence in Historical Environmental Impact Assessment: Soil Conservation in Lesotho in the 1930s and 1940s'.

87. The imperial willingness to force people in tropical Africa to work on state projects may be related to an earlier assumption that slavery was 'natural' to tropical environments and required to develop the territories. See Arnold, *The Problem of Nature: Environment, Culture and European Expansion*, 160-2.

88. P. Maack, "'We Don't Want Terraces!'" Protest and Identity under the Uluguru Land Usage Scheme,' in G. Maddox, J. Giblin, and I.N. Kimambo, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania* (Athens: Ohio University Press, 1996).

similar.⁸⁹ McCracken explains that in Malawi compulsory enforcement was necessary to sustain anti-erosion works, although Beinart records that people found some anti-erosion measures helpful and absorbed them into their own practice.⁹⁰

In general, in South Africa the state tended not to expend people's labour on terrace construction, although that did occur in Herschel in the Cape.⁹¹ In South Africa overgrazing was more of an issue than cultivation, but coercion existed here too. By the 1950s, 'rehabilitation', a new term for betterment, was motivated less by environmental concerns and more by the needs of segregation and political control. Subsequently, intervention into Africans' relations with the environment became more draconian. Planners reformulated those relations by designating living, plowing, and grazing spaces in reserves. This accompanied the reformation of governing structures through the institutions of indirect rule known as Bantu Authorities, which were intended to support the implementation of conservation. Top-down planning led to the removals of villages, fencing of land, new regulations over what could be plowed and where, and culling livestock when the numbers exceeded the officially sanctioned carrying capacity. Since agropastoralists measure their wealth in livestock, culling became the most notorious aspect of conservation in South Africa. When the population of animals surpassed the carrying capacity, people might be forced to sell off their animals, especially those of breeds deemed inferior. In South Africa, the most notable cases of culling happened in the Transvaal and the Transkei.⁹² In colonial Zimbabwe and Kenya, cattle were also culled, over the protests of their owners.⁹³ West Africa stands as an exception to coercive soil conservation. Although erosion could be a concern there, as it was in Sierra Leone, the state intervened less than it did in eastern, central and southern Africa.⁹⁴ Perhaps the larger number of settlers in these colonies and the pressure of their needs made the state more coercive.⁹⁵ Historians have written far less about the environmental history of West Africa than other regions and this necessarily reduces the parallels we can draw.

In 1983, involuntary stock reduction reached a violent peak, when the homeland of Bophuthatswana killed approximately 20,000 donkeys, against the wishes of their owners. This occurred, not coincidentally, as the foundation of 'Bantustans' made the division between whites living in civil society and blacks governed as tribal subjects most extreme. By this time, the justification of improving farming methods had fallen away. Actually, donkeys were well suited to the dry, bushy environment and they were very beneficial to poor people and women. Whether they caused long-term environmental damage was not demonstrated. It

89. A. Fiona Mackenzie, *Land, Ecology and Resistance in Kenya, 1880-1952* (Portsmouth, New Hampshire: Heinemann for the International African Institute, 1998), 155-69.

90. Beinart, 'Soil Erosion, Conservationism and Ideas about Development: A Southern African Exploration, 1900-1960'; McCracken, 'Conservation and Resistance in Colonial Malawi: The "Dead North" Revisited'.

91. Beinart, 'The Politics of Colonial Conservation'.

92. G. Mbeki, *South Africa: The Peasants' Revolt* (Baltimore: Penguin Books, 1964); P. Delius, *A Lion amongst the Cattle: Reconstruction and Resistance in the Northern Transvaal* (Oxford: James Currey, 1996).

93. R. Tignor, 'Kamba Political Protest: The Destocking Controversy of 1938,' *African Historical Studies*, vol. 4, 1971; A.K. Shutt, 'The Settlers' Cattle Complex: The Etiquette of Culling Cattle in Colonial Zimbabwe, 1938,' *Journal of African History*, vol. 43, 2002; Anderson, *Eroding the Commons: The Politics of Ecology in Baringo, Kenya 1890-1963*.

94. A. Millington, 'Environmental Degradation, Soil Conservation and Agricultural Policies in Sierra Leone, 1895-1984,' in D. Anderson and R. Grove, eds., *Conservation in Africa: People, Policies and Practice* (Cambridge: Cambridge University Press, 1987).

95. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa*, 48-53.

was clear, however, that they ate a lot to survive. Cattle were less well adapted and suffered during the drought of the early 1980s. Of course, cattle belonged to the rich and well connected. So, in order to preserve the veld for the animals of the elite, the Bophuthatswana police and army moved into villages and indiscriminately shot donkeys. The massacre was most intense in the semi-arid northern Cape, now the North-West Province.⁹⁶

By focusing on the state, this comparison has been top heavy, but continuities between the Cape and tropical Africa are also evident in the agency of colonized people living under coercive rule. The segregated and coercive character of conservation affected black conservationism and created resistance. It has often been noted that coercive conservation was a significant impetus to political resistance, in Kenya, Tanzania, Lesotho, Malawi, and South Africa, including Xhosa areas of the Cape.⁹⁷ Similarly, in Bophuthatswana, the killing of donkeys became a cause against apartheid, as the African National Congress capitalized on resentment over it.⁹⁸

Comparative Limits and Possibilities

The point about the importance of the state in colonial environmental history is larger than the one that the implementation of natural resource conservation was consistent among colonies. Soil conservation is merely the most recognizable example of intervention, perhaps because environmental historians agree that conservation fits within the boundaries of their field. Broadening the area of investigation to include another aspect of the human-environmental partnership - production - reveals another way that state intervention permeates the environmental history of Africa.⁹⁹ The crop that stimulated the most coercion was cotton. Allen Isaacman has described how it was the Portuguese in Mozambique who executed the most extensive and enduring interventions to increase cotton production. They and the British, French, Germans and Belgians also acted on behalf of the cotton output in Nigeria, Togo, Angola, the Sudan, Tanzania, the Democratic Republic of the Congo, Mali, Côte d'Ivoire, and Malawi, as detailed by essays in an edited volume, *Cotton, Colonialism, and Social History in Sub-Saharan Africa*. Elsewhere, Africans were forced to grow food crops to support colonial workers.¹⁰⁰ The structures allowing compulsory cultivation are those behind involuntary stock reduction or forced terracing: the authoritarian potential of traditional institutions, and the colonial versions of communal tenure and customary law. Thus, the historical context of the relegation of Africans to a tribal existence brings together state interventions in conservation and cultivation.

96. Jacobs, *Environment, Power, and Injustice: A South African History*, 195-204. A specific account of the donkey massacre and its political significance is available in N. Jacobs, 'The Great Bophuthatswana Donkey Massacre: Discourse on the Ass, and the Politics of Class and Grass,' *American Historical Review*, vol. 108, 2001. This article is also available at <http://www.atnesa.org/southafrica.htm> (cited July 15, 2003).

97. For cases of resistance, see all the histories of soil conservation in colonial Africa cited above, with the exception of that by Carswell. Also, William Beinart, 'Environmental Origins of the Pondoland Revolt,' in S. Dovers et al, eds., *South Africa's Environmental History: Cases and Comparisons*.

98. Jacobs, *Environment, Power, and Injustice: A South African History*, 214-7.

99. Mamdani includes soil conservation, forced cultivation and resettlement of pastoralists as related exercises of compulsion by the state. Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*, 124, 38-70.

100. Giles-Vernick, *Cutting the Vines of the Past: Environmental Histories of the Central African Rainforest*, 127.

Histories of forced cultivation come most clearly within the realm of environmental history when they address the impact of the state on the human-environmental partnership. While much of the writing on forced cultivation emphasizes political economy and social relationships, essays by Jamie Monson and Elias Mandala analyze the ways state interventions and the crop of cotton made an impact in African fields and diets.¹⁰¹ Probing the human-environmental partnership, their work would support comparisons between the ways soil conservation programs and forced cultivation affected the ways Africans interacted with and subsisted from their environments.

Before concluding, it is necessary to note that this emphasis on its authoritarianism and violence should not be taken as an argument about the efficacy of state power.¹⁰² It is rather an attempt to explain a tendency. The weakest governments can be the most violent, and violence may not help them achieve their goals.¹⁰³ The unintended effect of fruitless intervention may be profound and merits comparative analysis.

As with any comparative overview, the outlines sketched here are broad and simplified, presented with the goal of observing and explaining widespread tendencies rather than establishing a universal paradigm. The bifurcation between citizens and subjects in law led to different structural positions of the two groups, but even colonial subjects were in a position to negotiate with the state. The history of adaptation, avoidance, and initiative in the face of compulsory cotton production illustrates this well.¹⁰⁴ The picture of state intervention should always prove to be more complicated than one of coercion by Europeans leading to resistance by Africans. Not all state interventions involved forceful compulsions. The work of Grace Carswell on soil conservation in Uganda observes that chiefs did enforce conservation measures with fines and corporal punishment. Yet, colonial policy also drew on indigenous practices and persuasion and thus had more success and raised less opposition than conservation elsewhere.¹⁰⁵ Nigerian producers received (largely unsuccessful) incentives to grow cotton and these have parallels in countries with stronger civil societies and individual rights. Furthermore, involuntary stock reductions did take place among colonized Native Americans in the United States in the 1930s. As we recognize the negotiation between states and their colonial subjects, we should also be wary about idealizing the strength of individual rights in a civil society.¹⁰⁶

Asserting that the state was an active partner in the environmental history of twentieth-century Africa does not mean that environmental history should be

101. J. Monson, 'Rice and Cotton, Ritual and Resistance: Cash Cropping in Colonial Tanganyika, 1920-1940,' in A. Isaacman and R. Roberts, eds., *Cotton, Colonialism, and Social History in Sub-Saharan Africa* (Portsmouth, New Hampshire: Heinemann, 1996), 268-84; Elias Mandala, "'We Toiled for the White Man in Our Own Gardens': How the Self-Regulating Market Came to Colonial Malawi, in Isaacman and Roberts, eds., *Cotton, Colonialism, and Social History in Sub-Saharan Africa*, 285-305.

102. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa*; W. Beinart and J. McGregor, 'Introduction,' in Beinart and McGregor, eds., *Social History and African Environments*, 17.

103. P.M. Martin, 'The Violence of Empire,' in D. Birmingham and P.M. Martin, eds., *History of Central Africa* (Harlow: Longman, 1983).

104. See essays in Isaacman and Roberts, eds., *Cotton, Colonialism, and Social History in Sub-Saharan Africa*.

105. G. Carswell, 'Soil Conservation Policies in Colonial Kigezi, Uganda: Successful Implementation and Absence of Resistance,' in Beinart and McGregor, eds., *Social History and African Environments*.

106. R. White, *Roots of Dependency: Subsistence, Environment, and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983), 212-314; Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*.

about the state. Environmental history should still focus on its trademark questions of biophysical forces and environmental change.¹⁰⁷ Rather than being the main subject, the state offers a starting point for comparisons on many subjects. The ability of so many states to arrogate land and labour for a crop that farmers did not want to grow speaks of a common condition in colonial Africa. But because the condition is not universal, the state can serve as a touchstone for analyzing differences in African environmental history. Through such comparisons, Africanist historians can distil the important aspects of the 'distinctive historical context' and the various ways it shaped the ways people managed, conserved, produced from, and thought about the environment.¹⁰⁸ Furthermore, a background awareness of the coercive capacity of the colonial state will counteract narratives of biological imperialism that overlook human responsibility. An awareness of the environmental character of the state will also have practical repercussions for conservation and environmental policy.¹⁰⁹ Not least, drawing out the themes of autocracy and violence in environmental history may remind politicians and policy makers that rural environmental policy is also an area for contemporary reform.

Although the Cape does sustain comparisons with the United States, New Zealand, and Australia on the one hand, and tropical African countries on the other, it is an outlier in both cohorts. With its connections to such different histories, South Africa is unique among countries, and among its provinces, the Cape is the most paradoxical. The bifurcation of South Africa, which rises in part from the environmental diversity of the Cape, makes its history correspond to places which themselves have less in common. In either cohort, the Cape is exceptional. It is exceptional environmentally in Africa, and that has made its history distinctive on the continent. Among settler societies, it is exceptional politically, and the actions of its state join it to the environmental history of Africa as a whole. Still, we must recognize that the comparison has been between historical narratives, not between the unmediated pasts of these places. The two narratives - a neo-European one of settlers domesticating a landscape, holding land under private property, and participating in capitalized agriculture and the tropical African one of inconsistent environmental change and coercive intervention by the colonial and post-colonial state - represent our attempts to make sense of what is important. The differences between these narratives indicate different values in historians' approaches to the pasts of settler societies and tropical colonies.¹¹⁰ Perhaps future historians will lay value on currently unrecognized commonalities in the environmental histories of both cohorts. The Cape may then move from an outlying to a more central location in global environmental history.

107. Steyn, 'The Greening of Our Past? An Assessment of South African Environmental Historiography'.

108. The following authors probe the relationship between the state and conceptions of drought: S. Feierman, *Peasant Intellectuals: Anthropology and History in Tanzania* (Madison: University of Wisconsin Press, 1990); P. Landau, *The Realm of the Word: Language, Gender and Christianity in a Southern African Kingdom* (Portsmouth, New Hampshire: Heinemann, 1995); C. Crais, *The Politics of Evil: Magic, State Power and the Political Imagination in South Africa* (Cambridge: Cambridge University Press, 2002), 35-68; Jacobs, *Environment, Power, and Injustice: A South African History*, 210-3.

109. Giles-Vernick, *Cutting the Vines of the Past: Environmental Histories of the Central African Rainforest*; Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*, 174-205.

110. Readers who wish to explore the field of environmental history should explore the two major journals, *Environmental History*, published in the United States and *Environment and History*, published in the United Kingdom. The websites for the American Society for Environmental History ASEH (www.aseh.net) and the European Society for Environmental History (www.eseh.org) are also useful sources.