

The Elephant Problem: Science, Bureaucracy, and Kenya's National Parks, 1955 to 1975

Jeff Schauer

Abstract: This article examines debates about how to manage elephants in Kenya's Tsavo National Park as a jumping off point for exploring the relationships among the local, national, and global constituencies that converged in the formulation of wildlife policy in Kenya during the 1950s and 1960s. Bridging the colonial and post-colonial years, the so-called Elephant Problem in Tsavo, while leveraging different international constituencies, pitted different administrative philosophies against one another and drew out different understandings of the application of ecological sciences in national parks. The result was a paralysis of policymaking which sparked an overhaul of the wildlife departments in the 1970s.

Résumé: Cet article examine les débats sur la façon de gérer les éléphants dans le parc national du Tsavo au Kenya comme point de départ pour explorer les relations entre les circonscriptions locales, nationales et mondiales qui ont convergé dans la formulation de la politique sur la faune au Kenya pendant les années 1950 et 1960. Enjambant les années coloniales et postcoloniales, le soi-disant "problème des éléphants" au Tsavo a engendré des conflits entre différentes philosophies administratives tout en rapprochant différentes circonscriptions internationales et a révélé des attitudes divergentes concernant la mise en œuvre des principes scientifiques écologiques dans les parcs nationaux. Ces divergences ont paralysé le processus d'élaboration des mesures de protection, ce qui a déclenché une restructuration des départements de la flore et de la faune dans les années 1970.

Keywords: Kenya; colonialism; British Empire; environmental history; East Africa; national parks; postcolonial

African Studies Review, Volume 58, Number 1 (April 2015), pp. 177–198

Jeff Schauer is an assistant professor in the Department of History at the University of Nevada, Las Vegas. He is working on a manuscript provisionally titled "Imperial Ark: the Politics of Wildlife in East and Central Africa, 1900–1975," based on archival research in Britain, Kenya, Tanzania, Uganda, the United States, and Zambia. E-mail: Jeff.schauer@unlv.edu

© African Studies Association, 2015
doi:10.1017/asr.2015.9

Between 1955 and 1975, the Tsavo National Park in southern Kenya was the site of intense debate about the character of the national parks and the roles of government departments, international scientists, and global funding bodies. In particular, the so-called Elephant Problem in Kenya's Tsavo (East) National Park generated enormous public controversy, exposing deep divisions in an administration undergoing "Africanization" in the wake of independence.¹ Elephants had been the target of the earliest Game Departments in eastern Africa, where colonial administrators sought to limit their numbers and push them away from settled areas where African farmers and European plantation owners sought to make a living. After independence their protection served as the basis for stringent conservation efforts that drew on international funds and the resources of Game and National Parks Departments as well as the police, armed forces, and security services of East African countries like Kenya.² In addition, at the same time that Kenya—as a colony and nation—was struggling to manage these large mammals in Tsavo, a new wildlife industry was coming into being, a development charted by scholars concerned with conservation (see Adams 2004; Brockington 2002) as well as those interested in globalization (see Iriye 2004). The result was a striking inconsistency in the area of policymaking. One year the staff of the Kenya national parks would be scrambling to put together a quasi-military force to combat elephant poachers. The next it would be debating how many elephants its own staff should kill. These debates and policy reversals highlighted the strength and influence of international public opinion, the question marks hanging over the whereabouts of African governments to control ministries, departments, and parastatal organizations in the years following independence (especially when expatriates retained key roles), and the highly contested nature of the ecological sciences.

The different constituencies with a stake in the Elephant Problem sought to influence policymaking according to their vantage point and interests. In Kenya, the ministries that had responsibility for the national parks—first Forest, Game, and Fisheries, and later, after independence, Wildlife and Tourism—formed one constituency and sought to make parks generate revenue for the nation. Before 1963 the civil servants and politicians who populated these ministries were European; independence saw their gradual Africanization. The second constituency comprised the trustees and directors of the various national parks, which in their day-to-day operations were quasi-autonomous entities. The European and later African wardens who ran Tsavo, together with their staff of rangers, were the eyes and ears of the ministry, the trustees, and the director, as well as the arm of the law, and they wielded considerable influence. They were invested in the ideal of the national park as a sacrosanct space, and because the parks were parastatals, in some ways formed a constituency of their own. Additionally, international donors and funders became increasingly important after independence. They funded research projects, sponsored the training of the African staff who would

shortly take over the administration and running of the national parks, and thereby shaped wildlife policy based on an interest in conservation and preservation.

These international funds provided for the presence of international scientists, who formed yet another constituency as they conducted ecological studies in the Serengeti in Tanzania, Murchison Falls in Uganda, and Tsavo in Kenya. Their agendas were not always those of the ministries, departments, or parks where they made their homes, and scientific research became a business and an industry of its own, one that saw scientists cycle through multiple projects and parks, often less interested in “solving” the problems of a particular park than in making more generalizable ecological claims. Finally, and most amorphously, there was international public opinion, which had its own ideas about African wildlife, shaped not only by the reports of scientists and journalists from the field, but also by the romance of the safari, the “wilderness ideal” described by Neumann (1998). In general, the politics of the ministries and scientific communities were often at odds with the more idealistic conception of national parks adopted by wardens and the global public. Many members of the latter groups bought into the idea of national parks in Africa as “areas set aside in perpetuity—or in as near an approach to perpetuity as can be legally arranged—for the preservation of wild life, other than man,” a vision articulated in this case by Royal National Parks Director Mervyn Cowie in 1953 (KNA KW/8/7).³

In telling the story of the Elephant Problem at Tsavo National Park, this article highlights the divide between conservation sciences and park management, the competition between local managers and global scientists, and the conflicts between those who believed that the practice of conservation must change at independence and those who believed that the preindependence status quo was sufficient. It documents the different kinds of knowledge that informed the practice of conservation in African parks, which were run by governments under increasing pressure from global interests and institutions. Finally, it provides a local example of Mazower's (2009) contention that the international modes of organization that replaced imperial frameworks after the Second World War replicated many of the colonial relationships they were ostensibly dispatching.

This article begins by identifying the different “problems” park managers discovered in Tsavo—first poaching and then overpopulation—while describing the park's foundation. It then shows how, against the backdrop of new ecological sciences and methods, the Tsavo Project emerged as the wildlife industry's effort to “solve” the Elephant Problem in Tsavo. The article describes the rupture between scientific and management teams in the postcolonial park, and demonstrates the incompatibility of the claims to authority and invocations of knowledge leveraged by wardens and administrators, on the one hand, and international ecologists on the other, who by virtue of their own roles held very different ideas about the purpose of national parks. The divergent interests led to a model of park management

that shrank from simultaneous study and management, and remained in the view of its critics inordinately attentive to the demands of public opinion.

Elephant Problems in the Tsavo National Park

Tsavo East was created when the Tsavo National Park, gazetted in 1948, was split to facilitate administration (the other park was Tsavo West). The warden of Tsavo East, David Sheldrick, started his East African life as a soldier, and after a stint working with Safariland, he became an assistant warden and then a warden in his own right when he took over the park. In the early 1950s the problems posed by Tsavo's elephants were not much different from those associated with elephants elsewhere. Elephants living in close proximity to people, especially people who farmed, generally cause problems. There were large sisal estates adjoining the Tsavo National Parks, and the elephants regularly dined there to the annoyance of the owners who, in conjunction with Game Department (which dealt with wildlife outside of the parks) and National Parks staff, used selective shooting, thunder flashes, and electric fences to deter them, with little success (KNA KW/23/31). Strictly speaking, control work of this kind was the preserve of the Game Department, but because some of the offending animals were "park elephants," the National Parks got involved as well. But soon the park's managers were confronted with unprecedented problems that demanded their attention and called for more intensive forms of management and protection than they had employed in the past.

The Poaching Problem

The first novel manifestation of the Tsavo Elephant Problem was related to poaching, a phenomenon that was nothing new but that appeared to intensify during the mid-1950s when wardens started to find the carcasses of elephants slain by poisoned arrows strewn across the landscape. The newly formed Kenya Wild Life Society (1956) had identified poaching as one of the key problems it meant to address, and together with the Royal National Parks, the Game Department, the Kenya Police, the Kenya Police Reserve Air Wing, and the Ministry of Forest, Game and Fisheries, it quickly created a "field force," quartered at Voi and headed by Sheldrick. Normally, only the National Parks and the Game Department would have direct responsibility for wildlife (the former in the parks, the latter in the rest of the colony), but the security component of the poaching threat drew in other institutions.

The field force's approach to the poaching problem was twofold. On the one hand, it engaged in what one participant, Noel Simon, retrospectively called the "Gestapo technique." Simon described the raids on poachers, which sometimes involved "waking up households in the middle of the night, terrifying women and children, then getting the men to spit on their

companions” as “unpleasant” (Simon 2001:101). Poachers were identified using informants, and they were accosted and humiliated using these night raids because field force commanders reasoned that “poachers—like guerrillas—would always be more vulnerable in their homes” (Simon 2001:96). One of the two branches of the field force was even insensitively named Hola Force, before it was realized that the invocation of the notorious concentration camp where security services killed prisoners during the Mau Mau war was probably not the most effective propaganda (see Simon 2001; Holman 1967). Steinhart (2006) documents in great detail the increasingly military character of National Parks operations, which contributed to remaking Tsavo according to what Brockington (2002) called the “fortress” model of conservation. On the other hand, it was recognized that the mass imprisonment of poachers was impracticable, and so in 1959, under the auspices of the colonial government, the Game Department embarked on what would eventually be known as the Galana River Game Management Scheme (*Game Department Annual Report 1960*). Ultimately a failure, this represented one of the earliest efforts of something resembling “community conservation.”

Although Reuben Matheka (2005) sees the phenomenon as having a longer history in colonial Kenya, I would argue that the Galana Scheme was driven less by the administrative perspective that motivated earlier efforts to reach out to African communities than by the opportunity to monetize wildlife as a way of advancing global preservationist goals. Taking inspiration from the work of the Meru African District Council, and relying on a £10,000 grant from the Nuffield Foundation, the Galana Scheme, whose mantra was “sustained yield,” demonstrated little of the squeamishness about killing animals often associated with the preservationists who gave it their tacit backing. By killing a “sustainable” number of elephants on an annual basis, the scheme was designed to show “that land useless for agricultural or pastoral purposes is capable of yielding a worthwhile return from its wild life resources if properly managed.” Replicating colonial preoccupations documented in the “Pipeline” system with which the British combated Mau Mau fighters and sympathizers (see Elkins 2005), the Galana Scheme also sought to “[rehabilitate] the Waliangulu tribe by providing as many as possible of its members with employment,” and to manage elephants on the edges of the park by “controlling the increase of and if necessary reducing the elephant population . . . during the period when herds move out of that sanctuary” (*Game Department Annual Report 1960*). By 1960 around two thousand animals of a variety of species had been killed in the course of the scheme.

Game Warden Ian Parker, members of the Wildlife Society, and Sheldrick worked for a number of years at the scheme, but the fluctuating support of Waliangulu participants and the refusal of the government to allow the sale of ivory and rhino horns handicapped their efforts (Sheldrick 1973). These products were the most lucrative ones associated with wildlife, and the prerogative to market them was jealously guarded by colonial

authorities in the form of the Game Department and police, who ran the Ivory Room in Mombasa which processed trade from both Kenya and Uganda. Sheldrick carried on commanding the field force and the Wild Life Society continued its efforts. Parker, on the other hand, perhaps taking inspiration from the Galana Scheme, set up a company called Wildlife Services Limited, which will reappear in the story of the Tsavo Project.

The Population Problem

In the meantime, a new threat to the Tsavo elephants materialized. When the national parks were created, preservationists in Kenya conceded, however reluctantly, that wildlife outside of the parks would probably eventually cease to exist. Natural increase and the expansion of settlement, together with heavy poaching, conspired to push an abnormally large number of elephants into Tsavo East. Strict protection within the park further increased the number of elephants therein. Sheldrick's annual report in 1955 had already noted the impact that these elephants were having on the park's environment, observing, for example, "that certain trees such as baobab were beginning to be destroyed." By the early 1960s, with rainfall at dangerously low levels, more serious threats were evident, including the possibility that the entire park might be transformed into a desert thanks to the ravages of the elephants (KNA KW/24/32). At a conference that took place at Voi on July 11, 1962, involving personnel from the National Parks and the scientific community, attendees decided to recommend that Park trustees kill one-third of Tsavo's elephants (up to 3,700) over a period of two years (KNA KW/10/1). While not unusual in East Africa, and indeed routine in Uganda and Tanganyika, a cull of this scale would have been unprecedented in Kenya, where the preservationists were strongest.

Parks Director Mervyn Cowie prevaricated. Although he may have believed that a more systematic scientific study was necessary before undertaking action, he also made clear in a letter to the Nature Conservancy, a prominent international conservation organization, that he was aware of the public relations disaster that the killing of nearly four thousand elephants would have brought down on his head (KNA KW/10/1). Cowie immediately wrote to Julian Huxley, an eminent British scientist and former UNESCO secretary general, asking him to do propaganda work in Britain to explain why such a step might be necessary. Cowie thought that a "high-powered" scientist should conduct a study prior to undertaking culling, and wrote to the Nature Conservancy soliciting their assistance (KNA KW/10/1). The Nature Conservancy disagreed, writing that because Tsavo's ecological survival was on the line, Cowie should take prompt action. Huxley, an ally of the Nature Conservancy's founder, Max Nicholson, agreed. Huxley warned that the World Wildlife Fund, an international financial supporter of the National Parks and potential funding source of an additional study, should not be encouraged to fund a study for which the basic problem had been identified and a sensible solution had been devised (KNA KW/10/1).

However, the plight of the Tsavo elephants did not go unacknowledged around the world as the hour for the culling operation approached. The Fauna Preservation Society, another mainstay among international conservation groups, wrote to Cowie that their members were disturbed by the prospect of the impending cull (KNA KW/10/1). During one week in September 1962 sensational stories about the “slaughter” of the Tsavo elephants appeared in at least a dozen papers in Britain, Ireland, India, South Africa, and elsewhere (some of them echoing Cowie’s call for further study), even as the National Parks backed down from the culling plans (KNA KW/20/11). This debate continued for years, and later there was opposition within Kenya as well, where various “experts” took to the pages of the newspapers, reflecting the waxing anticolonialist discontent and suspicion that characterized the transfer of power and that would come to define the postcolonial politics of wildlife. Waruiru Gichuku Andwati, for example, who had worked as a tourist driver in Tsavo, contended that there were only two thousand elephants in the park and that “the imperialists have given the figures” that made a cull seem necessary. He called for a public appeal and warned that culling threatened to turn the elephants “wild” (KNA KW/20/9). A letter writer to the *Standard* (October 1, 1965) complained that “an atmosphere of unreality surrounds the entire scheme. How can one talk of a ‘population explosion’ among animals” so soon after a poaching crisis?” (KNA KW/20/9).

It was not just the fear of adverse public opinion that gave Cowie, the trustees, and the warden pause. An operation to kill thousands of elephants would have dealt a blow to the ideal of the national park. Although Kenyan parks (unlike, for example, those in the Congo) allowed and encouraged visitors, they were nonetheless designed as places set aside from the influences of humans, places where nature was supposed to be able to operate unchecked, however brutal the results. As indicated by the Tsavo Trustees’ 1963 statement of purpose, the park was dedicated to the commitment that “Tsavo East should, if possible, be retained as an area of woodland and bush mainly for the protection of elephants and rhinos and, where suitable, for small numbers of plains game” (KNA KW/6/61). In fact, the idea of parks as islands, untouched by their surroundings, was a deeply flawed one, given that they were subject to pressures generated by the movement of humans and animals outside of the parks (Brockington 2002; Neumann 1998). Cowie had admitted as much with reference to the Nairobi National Park, which famously borders the largest city in the region (KNA KW/13/31). Nonetheless, the national parks ideal retained a certain amount of power with parks staff and some international constituencies, and was probably behind David Sheldrick’s later objections to the large culls that were proposed (KNA KW/10/2). In a recent memoir Daphne Sheldrick suggests that she and her husband were motivated by the concern that culling “was particularly cruel and unpalatable to those who understood the very human emotional side of elephants” (2012:165). This set up a clash between those who believed in the traditional purpose of national parks and who

anthropomorphized animals, and those who saw the notion as outmoded and preferred to think of animals in terms of species and population.

Ecological thought offered no clear answers to the debate. Ecologists described a “natural” equilibrium that could simultaneously mitigate against dramatic intervention and require solicitous administration. If proponents of the parks ideal deplored man’s interference in the parks for sentimental reasons, park custodians also pointed to ecological evidence about the existence of a “climax stage” in ecology (see Worster 1993)—a fuzzy idea now given a veneer of scientific respectability—to support their desire to maintain some kind of balance of nature in the park. This theory, which formed the basis for most studies of national parks in Kenya and Tanganyika, was particularly influential in Uganda’s Nuffield Unit of Tropical Animal Ecology (NUTAE) and in the thinking of its chief scientist, Richard Laws, who came to Kenya in 1966 to work in Tsavo (Field & Laws 1970). Any culling, by this logic, was aimed at maintaining a supposedly “natural” habitat and was undertaken for the elephants’ own good. Ultimately, proponents of the parks ideal adopted the rhetoric of ecology even if their goal had nothing to do with measurable ecological equilibrium but was motivated instead by aesthetic values and a notion of “humanitarian” wildlife policies.

The Tsavo Project

Given the urgency of the threat to the Tsavo Park ecosystem, the managers responded by soliciting funds for a research project that would combine research and management. But the tensions surrounding what constituted a “natural” state, and how desirable or important the maintenance of such a state was, combined with global pressures and the protective mindset of the warden, meant that any such project had major hurdles to overcome and risked floundering in the absence of a consensus.

In 1965 Cowie finally got financing for his study, and it came in two stages. The first was a small-scale grant of \$11,059 from the World Wildlife Fund designed to cover the cost of a year-long survey (Vollmer & McGregor 1968). The second grant marked the transformation of project funding in East Africa and was funded not by a traditional preservation group, but rather by the Ford Foundation, which provided the Tsavo Research Project with £70,000. The Tsavo Project and its backers represented the full-fledged emergence of a new wildlife industry, comprising government departments and parastatals, the international conservation world, global financial institutions, and research scientists. Ostensibly, these constituencies would address research “problems,” but as the Tsavo case will illustrate, scientists chafed at the narrow constraints such a formulation placed upon their work, while parks staff resented the loss of control and the threat of a competing ideology. The Tsavo Project was supposed to run from October 1965 to January 1967. By 1966, when the members of the project committee finally located their lead scientist, Kenya had been independent for some years (KNA KW/10/3), the trustees were no longer

dominated by expatriates, and the Ministry of Tourism and Wildlife had become nominally responsible for the parks (KNA KW/1/62). The new director of the national parks was Perez Olindo, educated at Michigan State University as an early beneficiary of Russell Train's African Wildlife Leadership Foundation (AWLF, created in 1961). Partway through his course of study at MSU, Olindo was sent back to Kenya by the AWLF to tour schools and give a series of propaganda talks on conservation (Library of Congress, Russel E. Train papers). While perhaps not seen as an insider by the wildlife fraternity, Olindo, with his hands-on attitude, appealed to the expatriate wardens. Described by Daphne Shelldrack as "accommodating and amiable" (2012:160) and by others as "ambassadorial in his bearing" (Western 1997:119), Olindo would spend much of the next decade in a diplomatic role: mediating between people with different claims on his parks.

The head of the Tsavo Project was the British scientist Richard Laws, formerly responsible for NUTAE in Uganda, where he oversaw an energetic and activist policy of intervention. Laws—whose departure from Uganda involved disagreements with the newly Africanized management about personnel and research aims—took up his appointment at Tsavo in February 1967 (KNA/KW 6/71). But before then, at his direction, three hundred elephants had already been killed for use as a "sample" for studying various aspects of elephant biology and their survival in the ecological niche of the park. Laws's enemies (and they multiplied faster than the elephants) would later question the necessity of this sample, but at the time the trustees, the director, and the wardens were content to let their "expert" call the shots.

In Uganda, Laws had ordered the killing of 2,700 elephants for a sample. His general methodology appears to have been widely respected, and his work was much cited in other ecological studies of megafauna during his era. David Western, for example, who would later head the Kenya Wildlife Service, referred to Laws's "prodigious talent," "relentless statistical detail," and "painstaking" accumulation of data from the samples that he amassed—data that, Western wrote, made Laws's studies "the standard work of reference on elephant reproduction and population dynamics for two decades" (1997:117–20). By the time Laws arrived at Tsavo, he had published at least nine articles based on his work in Uganda (see Laws 2012). Laws requested that Ian Parker, formerly of the Galana River Game Management Scheme and later of Wildlife Services, Limited, and the individual who had performed the culling work in Uganda, also do the culling work at Tsavo, and the national parks authorities acceded to this request. The Uganda cull had been controversial, and the very mention of a cull in 1962 had set the headlines afire, so Laws, Parker, and the national parks authorities were all keen to avoid publicity. One of the key points resulting from the negotiations that led to Parker's employment was the provision that Parker and Laws would possess a veto on all visitors to areas where the culling was to take place and restrictions on the circulation of photographs (KNA/KW 10/3; Shelldrack 1973:125).

Daphne Sheldrick's memoir provides a description of a typical cull, which took advantage of elephant family groupings. Helicopters were used to spot the elephants, and when necessary, to drive them to a suitable location. Sheldrick's account of the destruction of a herd makes clear why Olindo, David Sheldrick, and Parker all feared vivid press accounts.

The leader was shot first, and her sudden death reduced the others to a panic-stricken, bewildered mob, who clustered around her in complete confusion, utterly demoralized and not knowing what to do next. Any remaining adults were then selected, leaving the calves clambering over their mothers' bodies in pathetic terror until they, too, died, and all that remained of the family was an inert herd of carcasses, the blood spilling out to form a sticky maroon pool before blending with the red Tsavo soil. (1973:187–88)

In a November 4, 1966, sanitized account of one operation, *Time* magazine described how a light plane would identify a herd and “white hunters” would descend from a helicopter and disappear “into the tangle of thorn trees. There was a burst of high-powered shots, a flutter of startled egrets. The hunters reappeared. Behind them lay a family of ten elephants, from a yearling calf to its great-tusked grandfather, all dead” (KNA/KW 20/13). Headlines, many of them collected by the National Parks staff to gauge public opinion, ranged from the blunt (“300 Elephants Slaughtered,” *Daily Express*, Oct. 20, 1966) to the clinical (“White Hunters Shoot Surplus of Elephants,” *Guardian*, Oct. 20, 1966), to the more sentimental (“Hunters Wipe Out Elephant Families,” *Toronto Globe*, Oct. 11, 1966) (KNA KW/20/13).

There was already a project team in place when Laws arrived on the ground to examine his samples and take up his post as director. A biologist and a forest officer were joined by four research assistants, an accountant, and various subordinate staff. In spite of his philosophical opposition to culling, David Sheldrick also lent the teams a hand when needed. Also appointed to the research team were a zoologist and botanist, whose presence raised issues about the research agenda (KNA KW/10/3). The biologist questioned the scientific rationale for culling the first three hundred elephants, for Laws's request for a second three hundred on the outskirts of the park, and for his later request for an additional 2,700 elephants for the study, although the full implications of this and other divisions—both within the project team and between the team and the warden and director—would not become apparent immediately. According to Laws's conception of the research problem, articulated in a report to the Tsavo Project's funders in 1967, the Tsavo elephants, “by uprooting, barking and destroying trees[,] have opened up the bush in certain areas,” and the replacing of grass by acacia allowed bush fires to make dangerous inroads. The “cropped” elephants—who would be studied in terms of their stomach contents, weight, growth curves, puberty statistics, calving intervals, general age structure, and other population variables—would be used to “obtain scientific data on the structure and dynamics of the elephant population, on its

reproduction, growth, social organization and feeding habits" (KNA KW/10/3). Laws's idea was that a study of elephants' feeding habits could demonstrate conclusively whether they were the culprits responsible for altering the Tsavo ecosystem. The project gradually took shape, with a physical infrastructure comprising four houses, a generator, three laboratories, a dark room, and toilets.

Administrative Politics in the Tsavo National Park

The management divide that would plague the Tsavo Project mirrored older divisions that were an outgrowth of changes in colonial administration. Emphasizing the wide latitude granted colonial administrators in Kenya, Bruce Berman describes how "generalized rules or maxims" came to constitute the "conventional wisdom of the Provincial Administration" (2002:233)—and, I would argue, of Kenya's wildlife department. The Croninism of these administrators was described by Berman as hierarchical, allergic to change from without, and enamored of the ideal of trusteeship (2002:234). According to Berman, the growth of the technical departments which so offended older colonial administrative sensibilities was mostly a feature of the 1940s, but the parks were slow to change. In many respects the divisions between the administration and the technical departments mirrored the postcolonial divide between the traditionalist wardens and technically minded scientists of the 1960s in Tsavo, a split at the heart of the acrimony that came to define the debates about Tsavo's Elephant Problem.

Early clashes between Richard Laws, the head of the project, and Perez Olindo, the director of the national parks who was working to assert control over an institution that Cowie had dominated for more than a decade, were over small matters. Olindo nixed Laws's proposal that a number of junior scientists be brought in from overseas, refused his request to keep found ivory (the postindependence government was as jealous of this prerogative as its predecessor), and insisted that instead of relying on the research team from Wildlife Services, Laws should train several staff members to form a culling team (KNA KW/10/3). In rebuking Laws, Olindo brought up his disrespect for administrative procedure and the high-handed manner in which the overseas scientists (Laws and the project biologist and zoologists) departed on leave at their whim, ignoring directives of the Kenyan government and declining to inform him when they would be absent from duty (KNA KW/10/3). Laws complained that Olindo's letter had "grave implications for the future of the research project." He wrote that "the Trustees and their staff do not want an effective research project, but one merely for show" (KNA KW/10/3). This barb might have been close to the truth, and the "study," designed to postpone the full culling operation, was turning into a public relations disaster on its own.

The straw that broke the scientist's back was the assigning of John Mutinda, Kenya's chief game warden, to take care of the administrative duties that Laws clearly felt were beneath his station. But Laws saw Mutinda

as a spy, sent to interfere with him and undermine his research (KNA KW/10/3), and he reacted by submitting a report in late 1967 to the chairman of the Board of Trustees titled “The Tsavo Research Project—Current Problems and Future Needs.” This report dealt only cursorily with the scientific aspects of the project before turning its fire on all other parties. Laws expressed outrage that he should be consigned to the position of “senior biologist.” He also complained that the trustees had been slow to hold meetings at his request, and accused Olindo of “interfer[ing] with the expenditure of funds.” Laws took on David Sheldrick as well, calling him an “estate manager”—a red flag to wardens of this era who were sensitive about their general lack of scientific training. He then noted that “in some cases the estate management practices may conflict with the conservation needs,” also suggesting that Sheldrick’s prize antipoaching campaign had been carried out sloppily, without regard for the ecological consequences (KNA KW/10/3). Laws added in a letter accompanying the report that “the work of the Tsavo Research Project has been severely hampered by administrative delays, obstructions and active antagonism from certain officers of the board” (KNA KW/24/35).

In general, Laws believed that as an international scientist of repute who practiced a more rigorous science than his Kenyan colleagues, he deserved to stand outside the chain of command established by the Kenyan government. On February 26, 1968, he wrote to the Board of Trustees offering his resignation, citing as an additional grievance his inability to gain the same leverage with the permanent secretary, Aloys Achieng, that Olindo and Sheldrick had (KNA KW/6/72; Laws 2012). Clearly, Laws’s departure was caused not just by institutional incompatibility, but also by personal antagonism that grew out of it. After leaving Tsavo, Laws launched a series of biting attacks on the trustees, Olindo, and Sheldrick, and also on the terms under which the national parks were run. One was a direct response to an October 4, 1968, article (“Reprieve for Tsavo Elephants: Nature Plays Tricks on the Massacre Advocates”) in a local magazine, *The Reporter*. Laws’s reply came in the form of two articles in the *Nation*, in which he castigated *The Reporter* for operating as a mouthpiece for Olindo and accused the Kenya national parks of subscribing to a “policy of *laissez-faire* as against ‘scientific conservation’”—a criticism that echoed those leveled by technical officers who worked on policy areas against the generalist administrative officers in the provincial administration during the colonial era. His critics, Laws wrote, were “sentimental,” and their arguments “in favor of nonintervention are not based on any published or verifiable evidence.” In fact, he continued, “the results of recent research indicate that, paradoxically, ‘strict preservation’ may well lead to the disappearance or gross reduction of the Tsavo elephant population within a few decades” (KNA KW/20/21). Olindo fired back in the *Sunday Nation*, expressing disbelief that “a person of [this] scientific stature should construe an unsigned article in a magazine as government policy” (KNA KW/20/21). Into the 1970s Laws continued to criticize the national parks, writing in *Oryx* and the *Times*

of Zambia, and Olindo continued to rebut Laws's claims and call the demand for culling precipitate, although his position was based more on the hoped-for potential of new studies to support different conclusions than on any firm ecological evidence.

Claims to Knowledge in the Tsavo National Park

Knowledge of the Tsavo National Park and its ecosystem were critical to the debates about the Elephant Problem that preceded and followed Laws's departure. Sheldrick, Parker, Laws, and Olindo drew on different kinds of information to make different kinds of claims. They debated the methods of evaluating the park, the morality of the claims, the motives behind the claims of their adversaries, and the purpose of national parks. The ongoing debate revealed a divergence of interests and of aims between Laws and other international researchers on the one hand, and local administrators on the other, and their questioning of one another's motives reflected not only scientific divisions but also the character of postcolonial politics.

Laws and the international researchers who headed the project were interested in doing large-scale comparative work: hence Laws's eagerness to transfer from Murchison to Tsavo. Their methods included the use of statistical surveying to estimate elephant populations, a practice that infuriated wardens who had cultivated intimate knowledge of individual animals and the personalities and characters of particular herds, and who therefore, according to both Sheldrick (2012) and Laws (2012), distrusted statistically derived data. International ecologists had scientific reputations to maintain and they sought generalizable conclusions. Their first loyalty was not necessarily to their political and administrative superiors in the context of a specific project, and they believed that scientific practice (in their view a neutral process) should be independent of political concerns. Of course, the argument could be made that Laws's impatience with what he saw as the pandering of administrators to public opinion to the detriment of science was a luxury of his transient position, given that scientists were not the ones who had to deal with the political consequences of their decisions.

Whereas Laws had been interested in what he saw as a purely ecological approach to the Tsavo Elephant Problem, Ian Parker, whose own career straddled these two worlds, hoped to deliver economic returns from elephant culling, and saw how culling could serve scientific, economic, and propaganda purposes at the same time. Writing in response to criticisms of the national parks that Parker published in April 1972 in *Africana*, Walter Leuthold, a project scientist, noted that

Perhaps it might be useful to inform your readers that Mr Parker is the head of "Wildlife Services Ltd", a Nairobi-based firm that specializes in "wildlife research and management" (according to its letterhead), and that, in the past few years, has carried out several game cropping projects

on a commercial basis, including the culling of 2,000 elephants in Murchison Falls National Park, Uganda. Mr Parker's comments and "philosophy" must be evaluated in this context. (KNA KW/24/33)

Leuthold was not alone in his unease with a frank consideration of the potential economic benefits offered by wildlife. Daphne Sheldrick, drawing an explicit link to the "corruption [that] was creeping into the top echelons of independent Kenya," recalled Parker's telling her husband that "the elephants are going to go anyway . . . and those of us who protected them all these years deserve some of the spoils" (2012:168). Parker, for his part, lit into Keith Eltringham, who replaced Laws in Uganda and later wrote a book titled *Wildlife Resources and Economic Development* (1984). Parker eviscerated the book for its failure to tackle the link suggested in its title, attacked Eltringham for handling data uncritically, accused the book of "numerous errors" and "glaring omissions," and condemned the whole project as a "woolly and shallow treatise" (1985:399–400). Thus erstwhile allies fell out over the chain of command, the mixture of material profit and scientific knowledge, and the economic as well as scientific bases for large-scale culling.

Laws himself was not immune to criticism on purely scientific grounds. P. E. Glover, the Tsavo botanist who assumed a lead role in the project after Laws's departure, repeatedly (though mostly privately) called Laws's science into question, demonstrating that there were divisions not only between managers and ecologists, but also between different kinds of ecologists. Glover claimed that Laws had not been on the ground long enough to be sure that culling was necessary and that, in fact, Laws had tackled the problem the wrong way around by failing to first conduct a systematic vegetation study to determine the real state of the ecosystem and the elephants' impact. Laws had supervised extensive vegetation studies in Uganda, but according to Glover had been less rigorous in Kenya. Like others, Glover also invoked his own greater "experience of Africa" in a 1968 letter to Elspeth Huxley, suggesting—as the wardens of an earlier era had done when confronted by the evidence of what they derisively referred to as the "museum systematist and science expert" (TNA CO/536/155/3)—that a certain kind of boots-on-the-ground, amateur natural history experience trumped formal scientific investigation and theorizing (KNA KW/10/3).

Another scientific response to Laws's argument for culling was the assertion that Laws's and Parker's fixation with killing elephants had led them to overlook the influence of fire as the primary agent of ecological change in the park. According to this argument, made by Glover and Sheldrick, culling might have checked the transformation of the Tsavo ecosystem only if it had been begun much earlier, in the 1950s. Some critics also leveraged historical arguments. According to David Western, Sheldrick, who he claimed harbored "proprietary feelings about Tsavo," rebutted Laws at an early meeting of project members, saying that "the area [of Tsavo] was under grassland when the Gala grazed cattle . . . [during the] last

century. Their graves are still visible. The area later turned to bush after they abandoned the area and is in the process of becoming grassland again. What's happening in Tsavo today is part of a natural cycle and there is no need to cull'" (1997:119).⁴ On the one hand, therefore, Laws's critics argued that he was somehow *too* scientific and didn't understand, at a visceral level, the animals, the parks, or Africa. Instead of analyzing conditions on the ground, he was importing abstract theories to explain what only long tenure could actually make clear. On the other hand, his critics (often the same ones) suggested that Laws was *insufficiently* scientific. The principle of ecology, after all, is to gather knowledge on an entire ecosystem, and this holistic component, they argued, was lacking in Laws's work. Moreover, killing is a crude measure, whereas qualitative observation can reveal far more that is useful to science.

However, it also should be acknowledged that for Laws, as well as for Glover and Sheldrick themselves, these arguments were only partly about changes in the Tsavo ecosystem. Just as much at stake was the kind of knowledge that would carry weight with the trustees, Olindo, the permanent secretary at the ministry, and international funders in future battles over conservation and management. The element of personal reputation also undoubtedly played a role in the debate. One of Laws's critics asserted that he and the "Ian Parkers of this world" set out to "[crop] wild animals to justify their existence" (KNA KW/10/3) and burnish their reputations, expanding on the work from Murchison Falls without sufficient evidence or justification.

Nevertheless, tensions between scientists and administrators, though lessening after Laws's departure, did not die down, indicating that the problem was as much structural as personal. The formalization of administrative structures and procedures, and the efforts to professionalize wildlife departments with an aim of taking (at least in theory) a more activist approach to management, left little room for the informal culture that had characterized the Game and National Parks Departments during the colonial era when, in terms of attitudes and personnel, they were integrated fairly seamlessly into settler society and a much smaller and more homogeneous wildlife lobby. Glover wrote to Olindo complaining about wardens' petty interference in his attempts to host visiting scientists and groups of students from Nairobi University and expressing his concern that the wardens' disdain for scientists would ruin the park's reputation; "It has been made abundantly clear to us," he said, "that we [scientists] are not wanted!" (KNA KW/24/31). Representing the other side of the argument, the park's accountant expressed frustration with the scientists' lack of respect for accounting procedures and identified in other scientists the same creeping hubris that had damaged the park's reputation during Laws's tenure (KNA KW/24/31). Referring to the "slap happy administrative minds of scientists in general," he encouraged Olindo to refuse their requests and suspected that some of them were doing work on the side that took them away from

project duties (KNA KW/24/31). An unsigned note by a park administrator complained that

the whole concept of management . . . is slowly but surely being undermined by the horde of scientists who are now seeking fame. . . . Unless the activities within the research sphere—and their attendant scientists—can be kept within reasonable limits, then the warden and his staff might just as well relegate themselves to a secondary role in the eastern section of the park, since they will find themselves completely dominated by scientific research.” (KNA KW/24/32)

International scientists, these opponents suggested, failed to appreciate that national parks were not simply their laboratories or playgrounds. They belonged to the public, their facilities had to be designed to cater to the public, and at least to a certain extent, they had to look like what the public expected of a national park. It was hardly acceptable to have scientists killing off the four-legged tourist attractions which were critical to the Kenyan economy, a concern acknowledged in the 1965 project proposal to the Ford Foundation (KNA KW/10/2). Better than the scientific approach, parks proponents believed, was the looser style of management long favored by European wardens.

Daphne Sheldrick, for one, suspected that the divergent loyalties of scientists might have contributed to the difficulties the project experienced in getting funding. When the Ford Foundation grant expired in 1969 it had to rely on a temporary fixed allowance from the Kenyan government (although eventually the Ford Foundation came back on board). Members of the East African Wild Life Society, which funded a range of projects in the region in the late 1950s, worried that “far too much of the funds, donated by people with a genuine desire to improve the lot of wild animals, was channeled instead into nebulous and drawn-out research projects, whose benefits to the cause of conservation, management of parks, or the animals themselves, were very difficult to see” (1973:224). The priorities of funding bodies and of the public on whose donations they relied were very different from those of scientists who did not view conservation as a “cause” and were not particularly interested in the fate of individual animals, but rather in what could be gleaned from “pure research.” Sheldrick believed that her husband had wanted researchers to become actual members of the park’s staff, and not just “privileged birds of passage” (Sheldrick 1973:284).

Nevertheless, the accusation that researchers were high-flyers, more interested in their careers than in conservation, was of course only part of the story. The administration of the Kenya National Parks was fragmented, with the publicity-conscious trustees having the final word on matters of policy and the PR-savvy director conscious of the need to keep one eye on Kenyan public opinion and another on the park’s international reputation. The “study,” like the visit of the “high-powered scientist” (requested by Cowie in the early years of the Tsavo saga), had become a way to put off making a

decision and avoiding action. It was a cover-up of sorts, and as the Tsavo story demonstrates, scientists and administrators revised their opinion of what the Elephant Problem *really* was, and of what should be done about it, every few years between the 1950s and the mid-1970s. Effective management that was concurrent with study might have helped to alleviate this impasse, but preservationists had leveraged the global public to force African governments to protect wildlife. The creation of an attentive worldwide audience had ensured that actions violating the preservationist doctrine (such as the culling of elephants) would never be acceptable in international preservationist circles.

By the 1970s the pendulum had swung yet again, and the elephants were seen as badly threatened by poaching activities—so much so that in 1973 elephant hunting was banned altogether in Kenya. The ban was lifted the following year, but the increase in poaching and pressure from the international community led the Kenyan government to institute a full ban on hunting in 1977. The World Bank sponsored a series of antipoaching efforts that relied on Sheldrick's earlier "field force" militarization of the national park staff in Tsavo, an approach that extended to the culture of the national parks as a whole, because by the 1970s over half of the parks' wardens had spent time at Tsavo East under Sheldrick (KNA KW/1/6). Part of the conditions for a \$17,000,000 loan from the World Bank was the reorganization of the wildlife departments in Kenya, which in 1975 were folded into a single organization called the Ministry of Tourism and Wildlife (KNA KW 1/6). Pitched to the World Bank as a plan "far in advance of any park plan for U.S. or Canadian parks" (KNA KW/21/14), it promised not only administrative reorganization and consolidation of the parks, but also an increase in tourism and the revenue that flowed from it.

In the end, the reorganization did away with the trustees and strengthened the position of the director, also creating a single clearinghouse for the requisition of funds. This satisfied international actors by empowering the director to take quick action, and the Kenyan government by giving state authorities the ability to control "interference" by international funders. The Elephant Problem had not gone away, but the ministry was now committed, according to the Tsavo Research Co-Ordinating Committee in 1974, to a "wait-and-see" approach, still to be accompanied by "scientific studies of various aspects of the situation" (KNA KW/24/34). One reading of these developments would have confirmed Laws's worst fears from the 1960s: that the successors to the trustees were afraid to act on research and simply commissioned more and more of it, confident that any conclusions reached by one set of researchers would be undermined by the next round of studies. Another interpretation would suggest that the Ford Foundation-funded project had simply been superseded by the larger World Bank project that provided the framework for large-scale planning. The primary purpose of the Tsavo Research Project, its supervisors now admitted, was to provide a "monitoring service" (KNA KW/24/34). This was illustrated by the character of the studies the project undertook in the aftermath of the 1969–70

drought that killed a number of elephants and rhinoceroses. The studies dealt with “elephant behavior, population dynamics and movements,” with an aim to assessing “the approximate numbers and proportion of different age groups affected.” The project also looked at the feasibility of radio tracking, and conducted further vegetation studies (KNA KW/13/37). But there were no concrete objectives for these studies, no commitment to applying the findings, and no real sense of the kind of application the project would countenance. While not exactly “science for science’s sake,” the project, in its failure to link an array of research agendas to a concrete management scheme, seemed mostly resigned to the cyclical nature of the droughts, the population explosions, the poaching epidemics, and the bureaucratic battles that characterized decision-making on the Tsavo elephants between the early 1950s and 1970s. In this respect, Sheldrick’s views had won out, and the parks were treated as fluid entities, to be managed only gently.

Conclusion

So, why this reluctance to act? Why the confusion about what the Elephant Problem was, no less how to answer it? The reasons were both local—that is, peculiar to Tsavo East—and general—that is, reflective of the broader trajectory of wildlife policy in eastern Africa. At the local level, the incompatibility of Richard Laws with his coworkers was clearly a factor that contributed to the conflicts that plagued Tsavo during the 1960s and ’70s. What were framed by contemporary commentators as personal issues actually reflected drastically different management sensibilities, different scientific mandates, and divergent understandings of ecology. Just because they had international funding, should international scientists be allowed to dominate the park, particularly when that funding came to them through the Kenyan government? To whom did they report, and were their superiors obliged to take their advice? In the minds of Kenyan wardens, their local power bases threatened by “Africanization,” the immediate answer to those questions was clearly “no.” But as Laws’s vindictive campaign demonstrated, the issue was as much about who could control the narrative that was spun out in the newspapers, official correspondences, and international gossip channels as it was about official hierarchies.

The importance of narrative speaks to another major factor in the failure to act: public opinion. It was this, more than any uncertainty in the conclusions of scientists, that influenced the approach of the parks to the Elephant Problem. In committing itself fully to national parks (and the revenue from tourism that came with them), the postindependence government broke with the practice of the colonial government, to the pleasant surprise of wardens and the director. But paradoxically, because it was invested in the parks’ success—a success that depended on revenues from tourism and support from international and global funding bodies—the director, the trustees, and the ministry were all unwilling to countenance a course of

action that would jeopardize the standing of Kenya's national parks in Europe and North America. Even before Laws's arrival, the East African Wild Life Society, in 1964, had convened an emergency meeting in which they demanded that ecology experts account for the impact of any elephant culling on tourism (KNA KW/5/1). At this time, Kenya was beginning to market itself aggressively as a top destination for international tourism, and allowing too much "science" into the picture, with its cold calculations, could threaten the image it was presenting to the world. In essence, the Tsavo Elephant Problem was a product of a particular moment of transition for the national parks and for the Kenyan government. The concerns about poaching and overpopulation coincided with the transition of the parks management to the Ministry of Tourism and Wildlife. This put the parks on firmer financial footing, but it also meant the loss of some independence, and the new African director sought to assert his authority in the face of pressure from scientists who resented the controls imposed on them, wanted to use their research in individual parks to make generalizable claims about species, habitats, or ecology writ large, and regarded him as a mere bureaucrat. Both the director and the ministry, in the context of the new importance of tourism for Kenya, were acutely sensitive to adverse criticism from abroad, and vetoed plans to cull thousands of elephants. The combination of new constituencies, disconnected research agendas, new administrative structures, new sciences, new funding channels, and new priorities, combined with the variety of "problems" posed by the Tsavo elephants, produced a set of institutions and interests that were incapable of identifying, no less acting on, "solutions." The "study" became their preferred process of prevarication, and the Kenya Wildlife Management Project the ultimate panacea in which they placed their hopes for the future of national parks and tourism in a country not yet twenty years old.

The Elephant Problem of the 1960s and '70s had a number of ramifications. The debates among expatriate and white wardens, international scientists, and Kenyan politicians were conducted with a striking disregard for the human consequences, whether in terms of the fortress model of conservation developed under Sheldrick in the 1950s and fortified by the World Bank Project in the 1970s, in the National Parks' refusal to anticipate the consequences of their management philosophy, or in the scientists' unwillingness to consider the political nature of their work. During the 1950s the concerns about the poaching problem and the justifications for violent solutions became so ingrained that by the 1960s people figured not at all in debates about the Tsavo ecosystem. Although the World Bank's wildlife project included provisions for community-style conservation, a phenomenon also documented by Jim Igoe (2004), the war zone character of Tsavo, which would reemerge in the 1970s, left it as one of Brockington's "fortress" parks, better defended than most.

Richard Laws maintained later in his life that allowing the large-scale dying-off of elephants during the droughts in the 1970s contributed to the subsequent poaching crisis, in the sense that the ivory sought by would-be

poachers would not have been there in the first place if a systematic culling and processing scheme been undertaken (2012:278). Laws's logic was apparently that the natural, as opposed to managed, die-off of the 1970s left ivory lying around the park for anyone to pick up. Glen Martin (2012) suggests that animal rights arguments—which one might associate with the Sheldricks' critiques of culling—have changed the nature of conservation by introducing an element of sentimentality into what others believe should be an abstract scientific debate. But perhaps more directly, the fumbling of the Tsavo Project led to efforts by the World Bank and other international funders to press for the reorganization of the wildlife industry in a manner that ended up highlighting the struggles between the postcolonial state and powerful global wildlife industry, ultimately creating the political, institutional, and ideological setting for the "Ivory Wars" of later decades.

Acknowledgments

Richard Ambani, Philip Omondi, and Peterson Kithuka of the Kenya National Archives facilitated research for this article in Nairobi, which was further enabled by the financial support of U.C. Berkeley's Center for African Studies. I would also like to acknowledge the anonymous reviewers whose comments were exceptionally useful in introducing greater clarity to the article's argument.

References

Archival Sources

- CO 536/155/3.1929. Elephant Tusks, Weight limit permitted under special licence. *Game Department Annual Report 1960: Colony and Protectorate of Kenya*. 1961. Nairobi: Government Printer.
- Kenya National Archives (KNA)
- KW 1/5. Letter, October 10, 1966.
 - KNA KW 1/6. Miscellaneous Correspondence, 1957 to 1977.
 - KNA KW 1/15. All Staff Matters, 1962 to 1967.
 - KNA KW 1/62. Policy Confidential. 1960 to 1962.
 - KNA KW 5/1. Administration of Game Laws; Association Clubs Committees; East African Wildlife Society, 1964 to 1967.
 - KNA KW 6/61. Kenya National Parks Executive Committee Trustees, 1963 to 1965.
 - KNA KW 6/71. D W L Sheldrick Elephant Committee, 1966 to 1967. Box 23, Shelf 5480.
 - KNA KW 6/72. Working Papers for Meeting of Executive Committee of the Trustees. 1967.
 - KNA KW 8/7. Administration of Game Laws, Conferences, and Conventions. The Royal Commission and Game Preservation. 1953 to 1955.
 - KNA KW 10/1. Elephant Problems, 1961 to 1962.
 - KNA KW 10/2. Elephant Problems. 1964 to 1966.

- KNA KW 10/3. Elephant Problem 1966 to 1968.
 KNA KW 13/31. Nairobi National Park—Advisory Committee, 1946 to 1961.
 KNA KW 13/37. Tsavo East General Correspondence 1971 to 1976.
 KNA KW 20/9. Press Cuttings 1965.
 KNA KW 20/11. Overseas Press Comment, 1962 to 1963.
 KNA KW 20/13. Overseas Press Comment 1966.
 KNA KW 21/14. World Bank, 1974 to 1975.
 KNA KW 23/31. Warden's Report—Tsavo Park (East), 1949 to 1956.
 KNA KW 24/32. Tsavo Research Project, 1970 to 1972.
 KNA KW/24/34. Tsavo Research Project, 1974 to 1975.
 KNA KW 24/35. Tsavo Research Project 1968.
 KNA KW 20/21. Daily Nation Press Cuttings 1968.
 KNA KW 24/31. Tsavo Research Project 1968 to 1970.
 KNA KW 24/33. Tsavo Research Project, 1972 to 1973.
 KNA KW 24/34. Tsavo Research Project 1974 to 1975.

Library of Congress. Russell E. Train Papers. Folder 5.

Nuffield Unit of Tropical Animal Ecology—University Library (Cambridge).

Pitman, Charles. "African Wildlife" from Natural History Museum, Pitman File—Z. MSS.PIT C3.

Books and Articles

- Adams, W. M. 2004. *Against Extinction: The Story of Conservation*. London: Earthscan.
- Berman, Bruce. 2002. "Bureaucracy and Incumbent Violence: Colonial Administration and the Origins of the 'Mau Mau' Emergency." In *Unhappy Valley: Conflict in Kenya and Africa*, edited by Bruce Berman and John Lonsdale, 227–64. Athens: Ohio University Press.
- Brockington, Dan. 2002. *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania*. Bloomington: Indiana University Press.
- Elkins, Caroline. 2005. *Imperial Reckoning: The Untold Story of Britain's Gulag in Kenya*. New York: Henry Holt and Co.
- Eltringham, Keith. 1984. *Wildlife Resources and Economic Development*. New York: Wiley.
- Field, C. R., and R. M. Laws. 1970. "The Distribution of the Larger Herbivores in the Queen Elizabeth National Park, Uganda." *Journal of Applied Ecology* 7: 273–94.
- Gibson, Clark C. 1999. *Politicians and Poachers: The Political Economy of Wildlife Policy in Africa*. Cambridge, U.K.: Cambridge University Press.
- Holman, Dennis. 1967. *Massacre of the Elephants*. New York: Holt, Rinehart and Winston.
- Igoe, Jim. 2004. *Conservation and Globalization: A Study of National Parks and Indigenous Communities from East Africa to South Dakota*. Belmont, Calif.: Wadsworth/Thomson Learning.
- Iriye, Akira. 2004. *Global Community: The Role of International Organizations in the Making of the Contemporary World*. Berkeley: University of California Press.
- Kenya Wildlife Society. 1956. *First Annual Report*.
- Laws, Richard M. 2012. "Large Animals and Wide Horizons: Adventures of a Biologist. The Autobiography of Richard M. Laws." Edited by Arnoldus Schytte Blix. Available via the Scott Polar Research Institute, University of Cambridge.
- Martin, Glenn. 2012. *Game Changer: Animal Rights and the Fate of Africa's Wildlife*. Berkeley: University of California Press.
- Matheka, Reuben. 2005. "Antecedents to the Community Wildlife Conservation Programme in Kenya, 1946–1964." *Environment and History* 11 (3): 239–67.

- Mazower, Mark. 2009. *No Enchanted Palace: The End of Empire and the Ideological Origins of the United Nations*. Princeton, N.J.: Princeton University Press.
- Neumann, Roderick. 1998. *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*. Berkeley: University of California Press.
- Parker, Ian. 1985. "Wildlife Resources and Economic Development by S. K. Eltringham." *The Quarterly Review of Biology* 60 (3): 399–400.
- Sheldrick, Daphne. 1973. *The Tsavo Story*. London: Collins and Harvill Press.
- . 2012. *Love, Life, and Elephants: An African Love Story*. New York: Picador.
- Simon, Noel. 2001. "The Anti-poaching Campaign." In *An Impossible Dream: Some of Kenya's Last Colonial Wardens Recall the Game Department in the British Empire's Closing Years*, edited by Ian Parker and Stan Bleazard, 93–103. Moray, U.K.: Librario Publishing.
- Steinhart, Edward. 2006. *Black Poachers, White Hunters: A Social History of Hunting in Colonial Kenya*. Oxford: James Currey.
- Western, David. 1997. *In the Dust of Kilimanjaro*. Washington, D.C.: Island Press.
- Worster, Donald. 1993. *The Wealth of Nature: Environmental History and the Ecological Imagination*. New York: Oxford University Press.
- Vollmar, Fritz, and Alan McGregor. 1968. *The Ark Under Way: Second Report of the World Wildlife Fund, an International Organisation for Saving the World's Wildlife and Wild Places, 1965 to 1967*. Michigan: Héliographia.

Notes

1. Issues relating to Tsavo's ecosystem, wildlife, and politics became known as the "Elephant Problem" and appeared as such in Kenya National Archives files. See, e.g., KNA KW/10/1 Elephant Problems, 1961 to 1962; KNA KW/10/2 Elephant Problems, 1964 to 1966; KNA KW/10/3 Elephant Problem 1966 to 1968.
2. A Game Department was created in Kenya in 1907. It existed alongside other government departments, and at different times was under the supervision of different government ministries. In 1945 the colonial government created the first parks in Kenya through the Royal National Parks Ordinance. After independence the organization—which, unlike the Game Department, was a parastatal with a board of trustees—became known as the Kenya National Parks. In 1976 the Game Department and Kenya National Parks were folded into a single organization, the Wildlife Conservation and Management Department. The Game Department handled wildlife matters outside of the National Parks, focusing more on enforcing game laws and killing threatening or destructive animals. The National Parks were charged with managing and protecting wildlife in the parks.
3. The study of Tsavo complements the work of Roderick Neumann (1998) on Tanzania. It also complicates the narrative by showing that Western ideas about national parks in Africa were by no means monolithic or even consistent in their impact, and were informed as much by ecological calculations as by the romantic wilderness ideal that Neumann argues was imposed by colonial governments and international organizations.
4. Laws, in response, was contemptuous of Sheldrick's historicism and devoted eleven pages of an unpublished autobiography (2012) to debunking the warden's reading of historical accounts of travelers in the Tsavo region.