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Wildlife Management in South Sudan, 1901–2021: Conservation amidst Conflict

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Abstract

To date, there is no systematic research on the overlapping challenges of wildlife conservation and security in South Sudan, where the wildlife service (WLS) has institutionally survived for over a century while contending with poor state capacity and responsibility for protected areas (PAs) that cover vast territories characterized by chronic insecurity and food scarcity. Integrated into the country's "Organized Forces," South Sudan's park rangers play roles beyond conservation as armed actors in complex conflicts. Data obtained from archival research and field interviews shows that South Sudan's wildlife authorities have persisted since the colonial period in spite and because of chronic warfare.

Résumé

À ce jour, il n'existe aucune recherche systématique sur les défis croisés de la conservation de la faune et de la sécurité au Soudan du Sud, dont le service de la faune (WLS) a survécu institutionnellement pendant plus d'un siècle tout en luttant contre la faible capacité et faible responsabilité de l'État en matière d'aires protégées (AP) qui couvrent de vastes territoires caractérisés par une insécurité chronique et une pénurie alimentaire. Intégrés aux « forces organisées » du pays, les gardes forestiers du Soudan du Sud jouent des rôles au-delà de la conservation en tant qu'acteurs armés dans des conflits complexes. Les données obtenues à partir de recherches dans les archives et d'entretiens sur le terrain montrent que les autorités chargées de la faune sauvage au Soudan du Sud ont persisté depuis la période coloniale, malgré et à cause d'une guerre chronique.

Resumo

Até ao presente, ainda não foi feita uma investigação sistemática sobre os vários desafios que se colocam à conservação e à segurança da vida selvagem no Sudão do Sul. Neste país, os serviços para a defesa da vida selvagem têm sobrevivido ao longo de mais de um século, apesar de enfrentarem fraca capacidade e responsabilidade do Estado no que toca às áreas protegidas, as quais cobrem vastos territórios caracterizados por insegurança e escassez alimentar crónicas. Integrados nas “Forças Organizadas” do país, os guardas dos parques naturais desempenham um papel que não se limita à conservação, uma vez que são agentes armados em conflitos complexos. Os dados obtidos através da investigação em arquivos e de entrevistas no terreno demonstram que, no Sudão do Sul, as autoridades com o pelouro da proteção da vida selvagem existem desde o período colonial e têm persistido apesar e devido à situação crónica de guerra.

Keywords: Sudan; South Sudan; wildlife conservation; wildlife management; game preservation; militarization

Mots clés: Soudan; Soudan du Sud; conservation de la faune; gestion de la faune; préservation du gibier; militarisation

Introduction

Unlike African states known for their wildlife populations and safari tourism (e.g. Kenya, Tanzania, South Africa), South Sudan’s national parks and game reserves have largely gone unrecognized. Southern National Park, gazetted in 1939, is one of Africa’s oldest and largest protected areas (PAs). Boma and Badingilo National Parks, established in 1979 and 1986 respectively, span some 30,000 square kilometers and experience what has now been ranked the largest antelope migration on earth.¹ Such PAs once held promise as reservoirs of biodiversity and offered economic potential through eco-tourism, sport hunting, and scientific research of rare species. Yet decades of civil war, political instability, and chronic underdevelopment has put South Sudan at the bottom of most global indices.²

Today, the South Sudan Wildlife Service (WLS) sits within the Ministry of Wildlife Conservation and Tourism (MWCT). It faces many challenges, including poor state capacity and fickle donor support, all while managing a range of PAs of significant subnational variation in terrain, ecology, and in the livelihoods of the people that live in and around them. Covering vast distances, PAs invite encroachment by poachers and subsistence hunters where “your gun feeds you” amidst chronic insecurity and food scarcity induced by war and underdevelopment. South Sudan has long been a site of violent conflict, where rebels fought for decades to earn the country its independence in 2011. Soon after former rebels became custodians of their new state, civil war reignited in 2013 and continues a slow burn (International Crisis Group 2017, 2021).

In this context of chronic warfare, the WLS rangers are pulled into complex micro-dynamics of old and new conflicts, where the drivers of violence are fluid, localized, and overlapping. Rather than focusing primarily on wildlife conservation, South Sudan’s rangers are integrated into the country’s security sector—collectively called the “Organized Forces”—alongside the army, police, prison,

and fire brigade services, where they are just as likely to be used as combatants by or against the government than as stewards of PAs (Day 2020, 371).

Nevertheless, South Sudan's wildlife institutions have demonstrated remarkable adaptation and survival over time—from the colonial era through three civil wars. To be sure, the country's wildlife and wider environment remain vulnerable in part due to institutional failures. And while the WLS's capacity has been meager, the ongoing recognition of South Sudan's PAs and the maintenance of a germane state bureaucracy signals a certain institutional durability, even showing traces of progress in fits and starts. This presents a rather compelling puzzle that defies ordinary expectations. Where conflict may explain the decay of many South Sudanese state institutions, its wildlife sector remains intact, but not for the reasons one might think.

Combining the insights of scholars and practitioners, this article builds upon efforts to assess the linkages between conservation and conflict (Haenlein and Smith 2016). It argues that the durability of South Sudan's WLS is a function of its militarized role, itself a consequence of two key factors: 1) Colonial institutional antecedents; and 2) Modes of rebel governance and regime politics that emerged from decades of chronic warfare. The article makes an important empirical contribution as it represents the first attempt to assemble the available evidence and to tell a concise yet comprehensive story of wildlife conservation in South Sudan. Theoretically, the article contributes to the broader scholarship on environmental security and militarized conservation by situating South Sudan within its historical institutional context in order to explain patterns of wildlife politics and the complex roles of park rangers that serve functions beyond conservation. The South Sudan case offers generalizable implications for understanding wildlife management in African states and holds important lessons for policymakers and practitioners seeking to support conservation in conflict-affected countries, particularly in respect to the new principles for Protecting the Environment in Relation to Armed Conflict (PERAC) (United Nations 2022).

Methodologically, this article borrows from historical institutional approaches that examine the *longue durée* processes of institutional change and continuity over time (Hall and Taylor 1996; Thelen 1999). These processes have been structured by the distributional conflicts and the asymmetries of power associated with the origins, operation, and development of South Sudan's state institutions. The story of South Sudan's wildlife authorities follows the contours of path dependence, anchored in key moments of positive feedback that have rendered them self-reinforcing over time (Mahoney 2000; Pearson 2004).

Original data for this article draws upon a careful review of primary documents and multiple field interviews with current and former South Sudanese wildlife officials.³ Data collection has been a scavenger hunt through decades of patchy record-keeping, rare documents, and uncertain institutional memory, not to mention navigating the challenges of restricted access to insecure research sites. This effort maps across three historical periods, sharpening the central argument that colonial institutions established long-run causes for contemporary wildlife politics in South Sudan, which were reinforced by the dynamics of warfare over several decades.

The article proceeds with a brief overview of South Sudan's current wildlife profile, followed by a summary of prevailing scholarship, and a distillation of our core argument. It then traces the institutional trajectory of South Sudan's wildlife authorities over three periods: the late colonial era (1901–56), independent Sudan through its two civil wars (1956–2005), and South Sudan's political autonomy and independence (2005–present).

A snapshot of wildlife in South Sudan

Cross-referencing international and national records with local knowledge, South Sudan is home to six national parks (NP) and twelve game reserves (GR) (see [Table 1](#)), which vary in size, topography, and ecology (UNEP-WCM 2024; Republic of South Sudan 2013, 2019; Boitani 1981). Unsurprisingly, available data is inconsistent, with a mismatch of dates, sizes, spellings, and classifications. For instance, while Lantoto and Shambe are referred to as NPs, it remains unclear if they were officially designated as such. Radom NP, which sits within the

Table 1. National Parks and Game Reserves in South Sudan

National Parks	Area (to nearest km ²)	Date established
Boma National Park	20,000	1979
Badingilo National Park	8,935	1986
Lantoto National Park	760	1986
Nimule National Park	410	1935 GR/1954 NP
Shambe National Park	620	1985
Southern National Park	23,000	1939
Game Reserves	Area (to nearest km ²)	Date established
Ashana	900	1939
Bangangai	170	1939
Bire kapatuo	230	1939
Boro	1500	1986
Chelku	5500	1939
Fanyikang	480	1939
Juba	200	1939
Kidepo	1200	1975
Mbarizunga	180	1939
Meshra	4500	1986
Numatina	2100	1939
Zeraf	9000	1939

disputed Kafia Kingi enclave between Sudan and South Sudan, is expected to join the list, but only if the 2005 Comprehensive Peace Agreement that ended Sudan's civil war is ever fully implemented. What is generally undisputed is that roughly 14 percent of the country's land surface is formally designated as PAs that cover an estimated 90,000 km². The Sudd Ramsar site (at some 57,000 km²) is one of the world's largest freshwater ecosystems and the largest wetland in Africa, and includes Shambe, Zeraf, Fanyikang, and Meshra PAs. Additionally, the mountain range including the Imatong Central Forest Reserve is expected to be designated a new NP.

Prevailing perspectives: What we think we know

To date, there has been little systematic policy research and no scholarship on wildlife politics in South Sudan. Yet there is an existing body of literature that provides two entry points. The first is environmental security, which examines threat relationships between human activity and environmental change (Graeger 1996; Homer-Dixon 1999). This work has given way to more policy-oriented research on conservation in war zones, which studies habitat destruction, the overexploitation of natural resources (including wildlife populations), and pollution (Matthew, Halle, and Switzer 2002; Joyner 2017). A key omission of this work, however, is the divergent roles played by wildlife institutions in states like South Sudan. An additional flaw is its default assumption of Western-style conventional warfare (Machlis and Hanson 2008). In South Sudan, the technology of warfare is symmetric and irregular, fought between threadbare rebels and weak state militaries with small arms and unsophisticated equipment (Kalyvas and Balcells 2012). Its predatory supply chain therefore has different impacts on wildlife as well as the wider natural environment. In fact, low levels of technology can shield illicit extractive industries such as timber (Neumeister and Cooper 2019), with the resulting habitat loss and environmental damage.

The second set of literature centers on the concept of "green militarization" that examines "the use of military and paramilitary ... actors, techniques, technologies, and partnerships in the pursuit of conservation" (Lunstrum 2014). This approach considers the impact of militarized conservation on the civilian populations that live in and around PAs, where wildlife authorities are portrayed as coercive extensions of neo-liberal economic processes with linkages to foreign actors (Duffy et al. 2019). Here the management of PAs is not about conservation per se but about localized expressions of global securitization imperatives (Kelly and Ybarra 2016). A key argument is that militarized conservation has become tantamount to counterinsurgency, particularly in countries with current or past experiences with warfare (Dongol and Neumann 2021; Woods and Naimark 2020; Verweijen and Marijnen 2018; Duffy 2016; Ybarra 2012). Moreover, conservation actors are known to deploy "threat narratives" that label ordinary civilians as invaders and poachers as criminals, insurgents, or even terrorists, thereby legitimizing state violence in pursuit of conservation, even if it exacerbates local conflict dynamics (Lunstrum and Ybarra 2018; Duffy 2016).

The impressive volume of “green militarization” work has taken important steps towards problematizing wildlife conservation and the consequences of state violence deployed on its behalf. Yet from a theoretical perspective, this literature often sidesteps the raw political environment within which wildlife authorities operate, where their institutional origins and relationships to regime authority can otherwise play a significant role. As such, the prevailing view tends to overdetermine the linkages between militarized conservation and international forces like neoliberal economics, thus neglecting the micro-politics of warfare that can either threaten or sustain wildlife institutions over time.

The South Sudanese case raises additional empirical issues. The lack of foreign involvement in South Sudan’s wildlife sector contrasts with the dominant view of global actors in militarized conservation. However militarized the WLS might be, the factors driving this are not international, but are instead homegrown. Sudan’s PAs have barely ever been governed, let alone governed by a “settler logic of dispossession” (Ybarra 2018). This is not to say that South Sudanese have not experienced racialized displacement or predatory resource accumulation by authoritarian leaders. But to date, the role of international conservation politics has been negligible in this context, especially when it comes to the survival of the WLS.

And while South Sudan’s rangers have been counterinsurgents at times (Day 2020), they have done so not in the service of conservation, but of regime security. In South Sudan, the dominant threat narratives that reach global audiences are the drivers of chronic humanitarian crises (International Crisis Group 2018, 2022). And on the ground, prevailing narratives related to South Sudan’s PAs are not about threats to wildlife but those that impact the incumbent regime’s authority. Moreover, like other elements of South Sudan’s security sector, the organization and institutional behavior of the WLS is not monolithic and varies across the country. This is especially salient considering how the geography of PAs places the WLS within violently disputed territories and alongside the very rural communities from which it largely draws its ranger force.

This article addresses these issues with the environmental security and “green militarization” perspectives. The case of South Sudan shows how warfare and militarized conservation have threatened wildlife but have had unanticipated impacts upon the durability of the country’s wildlife institutions. It also shows how the historical institutional underpinnings of South Sudan’s political context have led to patterns of militarized conservation. The central argument asserts that these patterns are tied to how regimes and rebels alike have adapted to wildlife institutions anchored in the colonial era, and how these have developed over an extended period in the context of ongoing armed conflict, a matter to which this article now turns.

The puzzle of South Sudan’s wildlife politics

South Sudan’s wildlife institutions present a compelling puzzle simply because they exist when they should not. The key observation is that the country’s WLS

performs functions beyond wildlife management. Rather than act solely, or even occasionally, as stewards of PAs, park rangers in South Sudan are also armed actors that are extensions of formal and informal politics at state and local levels. Consider the 2011 Wildlife Service Act, which explicitly states: “The President may, at any time, order the integration of the WLS, or any of its units,” into the national army (Laws of South Sudan 2011, 3). Consider also that the WLS provides the incumbent regime a warehouse for problematic actors such as retirement-age military commanders and demobilized insurgents, among others (Day 2020, 371).

The central argument here is that the durability of South Sudan’s wildlife institutions is a function of two key factors that have jointly unfolded over time. First, the persistence of the WLS is a path dependent outcome of its institutional antecedents associated with the Anglo-Egyptian Condominium period, during which many of the country’s PAs were established in line with British colonial wildlife policies elsewhere in Africa. Sudan’s Game Preservation Department addressed human-wildlife conflict and implemented Game Ordinances that regulated “native hunting” and sport shooting for colonial officers and visiting elites. Lacking the capacity to enforce laws, the role of interdicting poachers fell on the colonial army, thus militarizing wildlife management from an early juncture (Poggo 2009; Governor General of Sudan 1933, 1934).

The second factor follows Sudan’s independence in 1956, where chronic conflict paradoxically created conditions for a remarkable stickiness and reconstitution of the country’s wildlife institutions. During the country’s first civil war, the Anya Nya’s political economy relied on wildlife to fund and feed their fighters (Wakoson 1984, 165). During the second civil war, many southern Sudanese rangers were among the first to join the Sudan People’s Liberation Army (SPLA) (Africa Confidential 1983a), where they continued to operate a wildlife department, but as rebels and members of a political opposition movement (Alfred Akwoch, interview, Juba, April 18, 2019). In contemporary South Sudan, park rangers continue to play roles as combatants on multiple sides of the country’s current conflicts. On one hand, this logic plays out through the current regime’s tenuous control over internal order and its struggle to broadcast political authority within such a vast, sparsely populated country. This requires that rangers are institutionally situated within the orbit of regime security as part of South Sudan’s Organized Forces. On the other hand, local actors often recruit rangers to “negotiate” with political elites through violence. Taken together, these factors converge across three key historical periods and show how the initial institutional structures of South Sudan’s wildlife institutions have been reproduced over time both in spite of and because of chronic conflict.

Game preservation in late colonial Sudan (1901–1956)

To understand wildlife politics in contemporary South Sudan, it is essential to acknowledge its modest but significant institutional origins during the late colonial period, which set in motion a militarized approach to conservation. This begins with the nineteenth-century’s global ivory trade that opened up

southern Sudan's elephants to plunder (Wai 1981, 27). Buoyed by high ivory prices, European traders soon colluded with local intermediaries to create an internal network of ivory trading forts called *zaribas*—also used for slave raiding (Collins 2008, 16). As exports of ivory more than doubled between the 1840s and 1870s, among the priorities of the Sudanese Government was to have Khartoum's ivory trade rival that of Mombasa's (Carruthers 1997, 306).

Sudan's Game Preservation Department was created in 1901 in part to accommodate a distinct class of European "sportsman" who felt entitled to hunt and obliged to protect wildlife (Munro 2021). Some of their written accounts portrayed hunting in Sudan as a particular mark of imperial prowess (Austin 1902; Bulpett 1907). Indeed, as Abel Chapman wrote, "The crowning glory of the Sudan lies in its virgin Savagery; no appreciable area has yet been filched from its primaeval possessors—whether wild men or wild beasts" (1922, vii–ix). This reflected a decidedly small role for game preservation in Sudan, which made up one tenth of a percent of annual state expenditures and overspent by an average of a third of its budget each year.⁴ The Superintendent issued hunting licenses, tracked legal exports of animal products, and oversaw a modest Zoological Gardens in Khartoum. Periodically, he conducted "tours of inspection" where he made anecdotal observations of wildlife populations. The first systematic assessment of Sudan's game animals was not intended for the naturalist, but the novice sport hunter (Brocklehurst 1931).

The primary demand for sport hunting came from British colonial officers posted to Sudan. As David Comyn wrote, "one of the compensations for a solitary life at an out-station is the big-game shooting" (1911, 74). Visiting sportsmen accounted for only 17 percent of hunting licenses issued—the rest were to "officers, officials, and residents" (Governor General of Sudan, 1901–14, 1921–52). As per the 1903 Game Ordinance, a "sanctuary" of substantial size in eastern Sudan was set aside for "resident natives" and specially licensed officials to shoot game (*Sudan Gazette* 1903, 139–40). By 1906 this idea was extended to a more permissive "officer's reserve" (Governor General of Sudan 1906, 340) although unrestrained issuing of elephant hunting permits earned it the moniker the "game destruction department" (Carruthers 1997, 312).

Another key, albeit limited, role was in managing human–wildlife conflict, which required hunting and killing elephants and those animals that posed threats to human populations and agricultural production. Sudan's sheer size and sparse population made this task unfeasible—indeed as Stephen Cobb later noted, "geography is the biggest ally of the wildlife and greatest obstacle to its orderly conservation" (1981, 29). Relatedly, the Game Ordinance explicitly encouraged "native hunting" within certain limits (Molloy 1952, 29–33), which marked a radical departure from policies in other colonial territories that rendered indigenous hunting illegal (MacKenzie 1988; Steinhart 2006). While colonial officials were horrified by certain hunting practices (Molloy 1952, 30–32), other observers noted a balance between wildlife and ethnic groups that revered the animals they hunted (Arenson 1982).

From an early juncture, Sudan played a key role in shaping wider debates at the intersection of wildlife conservation and the expansion of colonial rule. The 1900 London Convention spawned the Society for the Preservation of the Wild

Fauna of the Empire (SPWFE), the first wildlife advocacy organization to push for standardized game laws in colonial Africa (Prendergast and Adams 2004).⁵ SPWFE's founder Edward Buxton is largely credited with directly pushing for more stringent game laws in Sudan, following his accounts from colonial East Africa (1902). As such, the Sudan Game Ordinance of 1903 protected certain animals while limiting killing others based on a classification schedule of different species and corresponding hunting license fees (*Sudan Gazette* 1903, 135–43). The landmark 1933 International Conference for the Protection of the Fauna and Flora of Africa featured a Sudanese delegation that came to adopt the “preservationist” paradigm (Happold 1966, 361; Schauer 2019, 120–21). Correspondingly, by 1935 a new Wild Animals Ordinance reset Sudan's institutional framework for the creation of Southern and Dinder National Parks, as well as a number of game reserves (*Sudan Government Gazette* 1935).

Because the Game Preservation Department was so resource-scarce, the enforcement of game laws relied upon the coercive apparatus of the colonial state, particularly the goodwill of district governors coordinating with their police forces (Nimir 1983, 67; Governor General of Sudan 1922, 1928). Above all, tackling ivory poaching operations became a matter of frontier security, falling on divisions of the Sudan Defence Force, namely the Eastern Arab Corps along the Abyssinian border (Governor General of Sudan 1927–36), and the Equatoria Corps in southern Sudan (Poggo 2009, 31), particularly following the acquisition of the wildlife-rich Lado Enclave (Governor General of Sudan 1910, 591–93). The sprinkling of game scouts in Sudan's PAs was insufficient to deal with any real threat to wildlife. As such the use of the police and colonial army portended a generative pattern of militarized enforcement in Sudan's wildlife management that normalized its adjacency to the state security apparatus.

By 1946, the appointment of a Game Warden for Southern Sudan (with an expanded ranger force) for the first time delegated authority away from a single warden based in Khartoum to one in the south, with the aim of training staff for a functioning wildlife service also capable of convincing local populations to value Sudan's Game Laws (Molloy 1957, 16–17). In practice, the Department remained small and woefully understaffed, despite taking on roles in wildlife control and promoting Sudan's PAs through “honorary game wardens” (Nimir 1983, 67–68). Yet the colonial government continued to sideline wildlife, claiming there was “not enough [game] to justify the capital expenditure of roads to make access easy for the ordinary tourist” (Governor General of Sudan 1946, 134).

On the eve of Sudan's independence on January 1, 1956, wildlife management was folded into a strategy crafted by outgoing colonial officers to develop Sudan's natural resources. Aside from a passing mention of the threats predators posed to livestock, the report's 262 pages dedicated less than a half dozen (in an Appendix) to discouraging the development of a wildlife sector that was taking in insufficient revenue (Southern Development Investigation Team 1955, 119–21). While the sale of game licenses, ivory, and rhino horns had generated nominal income, years of efforts to establish safari tourism in Sudan had encountered obstacles ranging from currency restrictions, poor facilities, and a short hunting season in an uncomfortable climate. British ecologist Frazer Darling asserted that there was no “wildlife management” in Sudan to speak of and that its parks

were “inadequately warded” (Darling 1961, 14). Happold later noted that in Sudan’s PAs during this period, the average number of square miles covered by each ranger was 188, in contrast to 17 per square miles per ranger in Uganda’s PAs (1966, 364).

Yet Darling also saw an opportunity for Sudan to adopt newer principles for wildlife conservation and PA management aligned with a “new attitude” towards scientific research, which required training a generation of Sudanese ecologists and educating ordinary Sudanese about their natural heritage. He advocated stricter sport hunting laws, new PAs in Darfur, and revisions to the Game Ordinance, and encouraged local communities to participate in conservation. Despite remaining underdeveloped, wildlife institutions crossed the threshold of Sudan’s independence. The inaugural director of Game and Fisheries highlighted the country’s three national parks, three sanctuaries and fourteen game reserves, painting a rosy picture of the quality, quantity, and accessibility of the country’s flora and fauna (Nabi 1956, 119–21).

Game preservation from independence to end of the Second Civil War (1956–2005)

Upon independence, the institutional boundary between Sudan’s security forces and wildlife authorities mirrored that of the colonial period. Game preservation remained relatively insulated from issues of public security but was still dependent on the new state army and police forces for the enforcement of game laws. In one instance, northern politicians sought to inflame southern resentments vis-à-vis wildlife as part of a “Sudanisation for Southerners” campaign that promised that “the Imperialist restrictions on game hunting will be removed, and people given licenses to hunt elephants and other game” (Report on the Commission of Inquiry 1956, 113). But wildlife protection remained secondary to state building and by August 1963, things gave way to the Anya Nya rebellion in the south, which shaped the trajectory of wildlife politics in fundamental ways.

First, wildlife populations now faced the dual problems of increased hunting and the total collapse of the system designed to protect it, with a number of game scouts joining the Anya Nya in the bush (Rolandsen 2011, 109). Meanwhile, southern Sudan’s PAs were rendered inaccessible due to insecurity, and soldiers and rebels alike turned to game as a source of protein (Kuotwel 1974, 5), while a spike in international prices for wildlife trophies attracted poachers that decimated Nimule National Park’s white rhinos (Cloudsley-Thompson 1973, 49–52). The availability of small arms also replaced traditional hunting weapons used by civilians displaced by conflict and in search of food.

Above all, in the absence of operational wildlife institutions, “game preservation” was repurposed by the Anya Nya towards the supply and maintenance of their rebellion. Acutely resource scarce, the Anya Nya relied largely on a guerrilla war economy based in village camps with farms that supplied food and basic supplies. Also attached to these camps was an “organized game department, which dealt in big game and seasoned meat and skins were bartered for needed provisions,” particularly clothing and medicine (Wakoson 1984, 165). While it

remains unclear how widespread and systematic this “official” trade was, one known network extended into Zaire and Central African Republic. Here, Zair-ean mercenaries hired to fight the Simba rebellion traded food and weapons for leopard skins, elephant tusks, rhino horns, and crocodile and python skins procured by the Anya Nya’s “game department” (Wakoson 1984, 158). As a counterinsurgency tactic, the Sudanese army in turn targeted wildlife with artillery and machine guns to deprive rebels of this key revenue stream (Hoffman 1975, 2).

Wildlife conservation and the Southern Regional Government

The 1972 Addis Ababa Agreement that ended the first Sudanese civil war integrated wildlife management into an autonomous south’s reconstituted security sector, a problematic process on its own (Kasfir 1977). Up to six thousand Anya Nya fighters were integrated into the army, with remaining rebels populating local police, prisons, and the wildlife service (Johnson and Prunier 1993, 120; Wenyin 1985, 65). A further 650 ex-rebels joined the “small nucleus” of those existing wildlife officials—although 200 subsequently shifted to police and prisons, with members of the wildlife authorities shuffled among the security sector’s other services (Blower 1977, 5, 16). The Addis Ababa Agreement also meant that the Southern Regional Government (SRG) was able to manage its own wildlife policy. Indeed, while many features of southern Sudan’s promised autonomy did not come to fruition, wildlife management now operated with essentially no oversight from the Game Preservation Department in Khartoum (Kuotwel 1974, 1; Blower 1977, 13).

Thus, the Juba-based Department of Wildlife Conservation and Tourism entered a relatively stable period with a number of prospects and a range of impediments. Dinder NP (in northern Sudan) had received a paltry 265 visitors throughout the 1960s, while game scouts in Nimule NP (in southern Sudan) were withdrawn due to conflict (Cloudsley-Thompson 1973, 50). In fact, since the start of the civil war, no complete survey had been conducted for any of the south’s PAs, meaning few knew their formal boundaries, let alone how to control what then accounted for 7.5 percent of southern Sudanese territory. One assessment of Southern NP noted “nobody belonging to the Wildlife Conservation Department has been inside [the NP] since the signing of the Agreement” (Hoffman 1975, 23–24).

The Department received a staffing increase in 1973. But few had ever received wildlife training, and salaries were not commensurate with those in other parts of the security apparatus, compelling some to hunt for food (Kuotwel 1974, 3–4; Blower 1977; Hoffman 1975). From 1972 to 1974, the Department collected enough revenue from sport hunting licenses to make basic purchases of arms and vehicles (Kuotwel 1974, 5). But aside from chronic problems of no fuel or spare parts (John Fryxell, interview, Zoom, July 14, 2022), licenses were so haphazardly issued that overall resource capacity remained too low to protect wildlife in a postconflict region awash with poverty, poachers, and small arms (Hoffman 1975, 14).

The ensuing years allowed for the first aerial surveys of PAs and scientific research on rare species. But southern Sudan's rickety wildlife institutions still faced the competing problems of wildlife protection and the imperative to earn revenue through a growing sport hunting industry. Quotas established by the 1935 Game Ordinance did not correspond with existing wildlife, and there was no mechanism to verify those animals actually killed by hunters (Hoffman 1975). Following an assessment of Sudan's game laws (Moore 1974), the Wildlife and Parks Act of 1975 attempted to rationalize the scheduling of animals and streamline sport hunting as a constituent element of wildlife management by establishing fifty "hunting blocks" in the south (Boitani 1981, 137–40). Additional legislation followed to register safari companies and manage the buying and selling of shooting permits and game licenses. In practice, safari companies could hunt within a 60-mile radius from their base camps, provided they were located outside PAs and accompanied by government game scouts (Robin Hurt, interview, WhatsApp, July 10, 2023).

The Department of Wildlife and Tourism thus grew in tandem with sport hunting—the 1975/76 hunting season collected SE£147,390 in license fees from 94 visitors, which also rippled through other economies via customs duties and local purchases (Blower 1977, 11). By 1976 there were five safari outfitters registered in southern Sudan (Blower 1977, 28), which was now among the only East African state to have not banned trophy hunting. A global set of clients drawn to the prospect of free-range hunting through challenging terrain could track a single eland or Bongo for weeks (Hurt, interview). But establishing a tourist industry faced many hurdles, including a short hunting season, only one functioning hotel in Juba, and not a single PA with suitable facilities to host visitors. And it was not cheap—a twenty-one-day Bongo hunting safari cost a minimum of \$1,700 paid in advance (\$8,360 in today's dollars). In fact, sport hunting was 40 per cent more expensive in southern Sudan than in Kenya (Blower 1977, 29). Of the 350 tourists that passed through Juba during the 1976/77 season, most were in transit elsewhere (Boitani 1981, 135).

Throughout this period, game scouts equipped with only surplus 303 rifles were no match for well-organized, heavily armed elephant poaching operations advancing on camel and horseback from northern Sudan (Hurt, interview). Thus an emerging consensus was that southern Sudan's WLS had to become, as Blower described, a:

specialized law enforcement agency with duties broadly comparable to the police. Field staff are armed and uniformed and should be organized and disciplined on a similar basis to the police and other para-military organizations. It is therefore essential that the Department should be given the legal status of an Organized Force. (1977, 39)

This dominant approach went against earlier recommendations that discouraged creating a revolving door among different security forces (Hoffman 1975, 56) and advised against arming those considered "not like the army" (Hoffman

1975, 64–65). But the pattern of militarized rangers was set, with consequences for Sudan’s second civil war.

Wildlife management during the second civil war

Sanguine assessments of southern Sudan’s wildlife sector were soon confronted with the rapid unraveling of the Addis Ababa Agreement and the erosion of the south’s regional autonomy (Badal 1985). Following the September Laws of 1983 that institutionalized *Shari’ah* law for all of Sudan, a new coalition of southern elites and military strongmen formed the SPLA and reignited civil war.

While a small number of wildlife officials remained government loyalists (Joseph Orotto, interview, Juba, April 18, 2019), the SRG’s Minister of Wildlife and Tourism, Samuel Gai Tut, also a former Anya Nya fighter, was among the first to join the SPLA (Africa Confidential 1983a). He was followed closely by defecting game scouts in the field, alongside many others from the army, police, and prisons (Africa Confidential 1983b). Strikingly, rather than deploy a standing force of game scouts for paramilitary operations, SPLA leader John Garang directed them instead to maintain an SPLM wildlife department (Alfred Akwoch, interview, Juba, April 18, 2019).

Thus, wildlife management integrated into the sphere of rebel governance within SPLA-controlled territory, a role Garang predicted would continue in a postconflict southern Sudan in the vein of the 1970s. The SPLA’s foundational documents show game preservation embedded as a clear feature of its early institutions. The SPLA’s First National Convention established a Secretariat of Wildlife, Environmental Conservation, Fisheries and Tourism, as well as two separate legislative acts distinguishing between Wildlife Conservation and Wildlife Forces (SPLA/M 1994). Above all, the National Convention explicitly lists “The Wildlife Rangers” among the “Organized Forces of the New Sudan”—with the Army, the Police Force, Prison Warders, followed by the Peoples’ Militia and the Fire Brigades. Strikingly, in June 1991 President Omar al-Bashir of Sudan ordered all officers to leave the WLS on the basis that they were now fighting with the rebels (Fraser Tong, interview, Juba, 2016).

The integration of wildlife authorities into the SPLA’s security apparatus, and hence the Organized Forces, was further clarified by the recommendation that the “Inspector General of Wildlife Forces to be a co-opted member of the SPLA General Military Council” (Sudan People’s Liberation Army/Movement 1999). An additional recommendation stated, “deployment of Wildlife Forces for military duties shall be in consultation with the wildlife authorities for limited duration,” and listed among its modest accomplishments the “contribution of wildlife meat and men to the war efforts.” While ongoing conscription of park rangers into regular SPLA forces hampered the capacity to carry out game preservation, the New Sudan Wildlife Service (NSWS) carried out elephant protection operations in Nimule Park, including an assessment based on methodologies of a previous Juba University survey (Morjan et al. 2000). These events marked a formal reconstitution of wildlife institutions into southern Sudanese politics, which had significant implications for their trajectory at the end of the civil war.

Wildlife management during political autonomy and independence (2005–present)

The structural antecedents and patterns of militarization that sustained wildlife institutions set the scene for key developments that followed the 2005 Comprehensive Peace Agreement that ended Sudan's second civil war and restored regional autonomy to southern Sudan. In a context where security actors came to dominate nearly all aspects of politics and society, the WLS was now integrated into the Organized Forces and ever more familiar with security duties than the management of PAs.

While most donors focused on Sector Reform (SSR) programs to assist the SPLA's transition into the national army of a sovereign government, other donors focused attention upon reforming the police and prison services, excluding the WLS. Meanwhile, the 2006 Juba Declaration, which ran parallel to the Comprehensive Peace Agreement, sought to integrate the myriad armed factions of Sudan's second civil war into a reconfigured national security architecture (Pendle 2018). A key stipulation of this restructuring required more than 60,000 militias and soldiers to be integrated across the Organized Forces. WLS ranks swelled to "14,000–18,000," a disputable figure as there was no reliable record or payroll to verify the numbers. But it was far beyond what had previously existed. Much effort went into constructing a "payroll" for the SPLA as an official indicator of efforts to move ex-combatants through the process of disarmament, demobilization, and reintegration (DDR), which also ensured a distribution of the country's new oil wealth (interviews, Andrew Natsios, Juba, 2010/11). More importantly, however, keeping ex-combatants on a "payroll" served key patronage functions for southern Sudan's politico-military elites, as dispensing salaries allowed them to maintain control over individuals and armed groups.

The proliferation of small arms, particularly in rural areas, represented the most significant impediment for the WLS when compared with earlier eras in wildlife management. The widespread availability of automatic weapons resulted from flows of arms to all sides of the previous civil wars in the southern province, which remains unregulated (Larjour Consultancy 2002; Conflict Armament Research 2018; Amnesty International 2020). In the absence of fair security guarantees from the state, government-led civilian disarmament campaigns achieved minimal impact (Garside 2021; O'Brien 2009). They also provided clear evidence of a central government not in control of the country, and a national WLS without the operational capacity to tackle the armed threat its patrols faced. While international assessments argued that poaching with automatic weapons was the primary reason for the loss of wild fauna numbers, the lack of development ensured the natural habitat remained largely intact (Garside 2021).

Inside the WLS, State Directors often claimed salaries for deceased rangers to ensure their families received compensation for their loss. In other cases, State Directors "declared their dead" as a negotiation tactic with the MWCT so as to recruit new, young rangers, which became a standard practice once international conservation organizations started to develop the WLS.⁶ Still, in spite of the millions spent on SSR, the wildlife sector fell into a gap somewhere between a

broad international development agenda and more narrow private sector opportunities in wildlife tourism that were still years away.

Wildlife management in independent South Sudan

South Sudan's independence on July 9, 2011 saw very little change in terms of the WLS's dual roles in conservation and security. Despite remaining a low priority, images of wildlife now appeared on most of the country's new banknotes. WLS signage and insignia were freshly renamed, and ranger posts raised the new national flag daily across the country. Newly empowered former officials noted that because wildlife populations had "paid their due during the war" they should be given a chance to recover (Winter 2007), also arguing that restoring sport hunting as a source of state revenue should be paused until the status of wildlife populations had been properly established. The new government began drafting national legislation committed to the development of the country's PAs. The year 2013 saw a new national policy for Wildlife Conservation and Protected Areas, and moves were begun to adopt internationally recognized wildlife conventions.

Complicating matters was the administrative jurisdiction of the WLS, an armed service under the MWCT. Aligned with the Organized Forces, it was affiliated with states and counties, rather than allocated to PAs. Indeed, territory demarcated by state boundaries took priority over habitats demarcated as PAs. As a result, at the subnational level WLS officials now had two chains of command—one to powerful State Governors and another to the MWCT in Juba. The WLS became more effective at subnational level, especially where State Wildlife Directors extended patronage and authority over locally recruited rangers. Indeed, in some cases it became apparent that new ranger posts established to manage PAs were instead viewed by State Governors as a defensive line against rival counterparts in other states (interviews, State Governors, Juba, 2013). Viewed from the regime in Juba, a likely outcome of this emergent subnational capacity was a deliberate strategy of keeping the WLS at a low level of operational capability. During this time, some progressive State Governors stated they would rather see their rangers engaged in wildlife management, if only someone would train and equip them (*ibid.*).⁷ Yet, by and large, the primary purpose of the WLS was to remain an active part of the Organized Forces.

Two key events illustrate this point. First, in April 2012 the SPLA attempted to seize control of the oilfields at Heglig in Sudan. In anticipation of a retaliatory assault from Sudan, the country was put on alert, the WLS was told to "prepare to defend the rural areas," and communities were ordered to cultivate food to support an expected war effort. Several WLS officers explained the division of labor: "the SPLA attacks, the WLS is the home guard for the rural areas, and the police take care of the towns" (interviews, WLS and Western Equatoria State officials, 2012).

The second event involved the ongoing conflict between the Murle, Lou Nuer, and Dinka in Jonglei State, during which the Boma NP Warden was killed (Human Security Baseline Assessment 2013). In a bid to tame the violence, President Salva Kiir ordered the states to mobilize members of the Organized Forces to support a

national security operation in Jonglei. Not only did this unpopular move face resistance from State Governors, but staff from the two international conservation nongovernmental organizations (NGOs) rushed to the MWCT and state authorities to ring-fence those trained rangers at risk of deployment. In the end, no rangers were deployed, but this episode nevertheless highlighted the default assumptions of Juba's regime security imperatives and indicated the complexities for NGOs collaborating in new partnerships with the WLS. Facing internal political tensions, in late 2013, the ruling SPLM dismembered the MWCT and divided it between other government departments. The WLS remained nominally intact under a new Ministry of Interior and Wildlife Conservation, but its role as a conservation actor continued to be eclipsed by regime security, with one former WLS official arguing "an armed body of its size needed to be centralized as part of the army or police" (interview, Lt. General Philip Chol, Juba, November, 2013).

In this environment, the WLS struggled to define its mission and to work with limited capacity. At its inaugural conference in November 2013, each of the country's ten State Wildlife Directors explained how they were unable to carry out any wildlife management tasks without vehicles, fuel, and equipment. And despite being viewed by the regime in Juba as security actors, park rangers still required arms and ammunition to merely defend themselves from cattle herders and well-armed poachers (often themselves from other services in the Organized Forces). While the conference provided a forum for a range of voices and was attended by donors and counterparts from wildlife authorities in neighboring countries, the WLS has nevertheless received scant international attention. Despite clear opportunities to engage in South Sudan, the country has remained unpalatable to most international conservation organizations. At that time, only the Wildlife Conservation Society (WCS) and Fauna and Flora International (FFI) were active, making practical attempts to enable the WLS to take charge of the management of selected PAs, in spite of the political context. In 2012 during their first ever courses in PA management, the rangers "whooped" with pride at being taught the basics of managing PAs for their new country (Garside, Southern National Park, Feb 2012).

South Sudan's wildlife sector faced renewed difficulties in December 2013 as the country collapsed into a new civil war. While the conflict featured a binary national-level cleavage between the incumbent regime in the capital Juba and opposition forces, it also had multiple, overlapping vectors of violence carried out by actors that represented distinct subnational goals and identities often based on the control of territory. The country's security sector correspondingly splintered along these vectors, and many current and former combatants, including rangers, (re)joined the ranks of former alliances—government, opposition, and parochial forces based on traditional ties. Although the WLS ostensibly remained a state institution, on the ground it was more complex. The new conflict repeated the lines of previous civil wars, where the government controlled urban centers and rebels operated "from the bush." This complicated the management of PAs, which by their nature are located in the rural areas. In contested zones the burgeoning insurgency forced WLS rangers to hand over their weapons, abandon their posts, and flee to towns in spite of their familial ties

to rural communities. In some cases, government forces viewed those rangers that stood fast as cooperating with the armed opposition. Indeed, where the popular nomenclature of “going to the bush” had long been synonymous with a ranger’s place of work, it now became code for joining opposition forces.

To bring the WLS more closely back into the orbit of regime security, the government acted with remarkable efficiency and established a WLS payroll, something it had failed to do even in peacetime with donor support. The payroll provided evidence of “who was with them and who against” and redirected funds from withheld salaries. In contrast to a conservation role, however, the government restricted rangers to the defense of urban centers alongside other Organized Forces. And those rangers deployed in PAs in areas of armed opposition remained at their posts despite years without pay or fresh supplies (interviews, WLS rangers, Old Fangak, 2023).

Remarkably, the WLS remains intact as an institution. FFI has remained on the ground to successfully implement a joint WLS/community ranger model of PA management. And in the east where the WLS was supported by WCS, rangers broke an industrial bushmeat operation run by the SPLA. The African Parks Network has begun work to manage Boma and Badingilu NPs under a delegated management model, which for the first time relieves the WLS as the national institution responsible for managing these PAs. Yet the orientation as a security actor remains. As ceasefires and peace talks have unfolded and opposition movements have aligned with the regime in Juba, their members have been quickly redistributed across the Organized Forces and the WLS staff has once again swelled as a warehouse for former combatants who are untrained in modern wildlife management.

Conclusion

South Sudan’s natural habitats span savannahs to tropical forest, with diverse fauna and flora to match, and are maintained by a riverine system critical to the future health of the White Nile. Yet little is known about the country’s wildlife and the challenges associated with managing it. This article has sought to address these omissions by telling the story of South Sudan’s wildlife authorities as one of institutional survival. With militarized origins in the colonial period, chronic armed conflict over time has both put wildlife at risk and has played a role in sustaining the institutions tasked to protect it.

The South Sudan case has generalizable implications for understanding the divergent roles of wildlife authorities elsewhere in Africa, where variations in structural factors underpin different patterns of militarization—namely colonial antecedents and regime security in contentious political environments. In Uganda, whose militarized colonial game department was similar to South Sudan’s, contemporary regime security has produced rangers that are considered “sister forces” of the national army, but seldom engage directly in military operations.

Elsewhere, because PAs in Belgian Africa were primarily for scientific research, its rangers were not militarized historically. Today, foreign actors

militarize wildlife authorities in the Democratic Republic of Congo (DRC) to fight armed groups in PAs. But Congolese rangers operate independently of, and often at cross-purposes with, a weak national army and within a weak state. In neighboring Rwanda, rangers focus primarily on law enforcement in a more robust institutional environment (Day 2020). Yet there are outliers that require a rethink about generalizability. Rangers in Botswana and Cameroon, for instance, have limited security roles as militaries deploy directly against threats to wildlife. In Central African Republic (CAR), foreign-trained anti-poaching teams (*les pisteurs*) joined the Séléka rebellion during that country's more recent civil war (Lombard 2015).

Despite offering comparative leverage, South Sudan still presents distinct issues for scholars and practitioners to address related to the evolution of conservation amidst conflict since the colonial era. South Sudan's WLS is under-resourced, inexperienced in conservation principles, and with few external backers to manage PAs at local and state levels, across different types of habitats, and alongside agrarian and pastoralist societies. Above all, its integration into the state's Organized Forces requires it to take on combat roles beyond conservation as counterinsurgents (Day 2020). To conclude, a careful examination of South Sudan's experience suggests three challenges and three corresponding recommendations tailored to the country's characteristics.

First, although the WLS is visibly and functionally militarized (and has been historically) it does not present a credible deterrent to poaching. This is because South Sudan's designated PAs bestride subnational administrative territories contested by armed groups and highly militarized societies with access to small arms. The WLS also brings relatively little force to bear vis-à-vis more dominant parts of the formal and informal security sector that extend into these territories. Whereas dominant approaches cast doubt on militarized conservation's effectiveness (Duffy et al. 2019), here the issue may not be demilitarizing wildlife authorities per se but rather how to "protect the protectors" and develop more effective concepts for the implementation of PERAC (United Nations 2022). Reestablishing the boundaries of PAs as enforceable and distinct from contentious subnational political units should be a step towards disentangling the WLS from regime politics.

Second, as the WLS has evolved against the backdrop of multiple conflicts, a primary role has become controlling rural areas and defending the people that live there. This has left it with little concept for protecting wildlife and habitat, especially from the very people it defends. Yet this also presents an opportunity for international engagement tailored towards capacity building. The South Sudan case calls for a reexamination of current models for Collaborative Management Partnerships, or private-public partnerships between international conservation NGOs and state governments (World Bank 2021). Prevailing partnership models have made it difficult for the few NGOs in South Sudan to operate. These models need to adapt to situations where the state does not necessarily control the territory where PAs exist and where wildlife management risks becoming entangled in conflict involving nonstate actors.

Finally, even since the colonial period, South Sudan has followed the principle that local communities living in and around PAs should be involved in their

management and receive the benefits that accrue from conservation. Today, community conservation and incentive-led approaches (rather than centralized PA management strategies) remain particularly important given the fact that many WLS rangers are locally recruited. This can influence the perception of where “wildlife”—normally a politically neutral notion—sits within the context of ongoing armed conflict. This last point is crucial—in a country that has suffered decades of violence, disorder, and systematic repression, the aspiration for “development” rings strong against perceptions of conservation that requires keeping things as nature intended.

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Notes

1. African Parks, June 25, 2024, <https://www.africanparks.org/campaign/great-nile-migration>
2. South Sudan ranks last (192) on the Human Development Index (UNDP 2022), ties with Syria and Venezuela (177/180) for second place behind Somalia on Transparency International’s Corruption Perceptions Index (2022) and ranks third behind Yemen and Somalia on the Fragile States Index (Fund for Peace 2023).
3. Colonial documents are available through Durham University’s Sudan Archive. Various Sudan wildlife documents are available through the Rift Valley Institute’s Sudan Open Archive.
4. Budget data analyzed from Governor General Reports, 1901–14, 1921–53.
5. Now Flora and Fauna International (FFI).
6. When FFI and AWF initiated ranger training in Western and Eastern Equatoria respectively, State Wildlife Directors declared several rangers dead to recruit new rangers for training.
7. Governors in Western and Eastern Equatoria gave support to FFI and AWF to develop the capacity of the State WLS rangers.

References

- Africa Confidential*. 1983a. “Sudan: The Southern Front.” 24 (14), July 6.
 ———. 1983b. “Sudan: Allah and the South.” 24 (21), October 19.
- Amnesty International. 2020. *South Sudan: Evidence of Violations and Illicit Concealment of Arms Must Spur UN to Renew Arms Embargo*. April 30.
- Arenson, John. 1982. “Murle: Traditional Hunters of Sudan.” *SWARA* 5 (2): 28–31.
- Austin, H.H. 1902. *Among Swamps and Giants in Equatorial Africa: An Account of Surveys and Adventures in the Southern Sudan and British East Africa*. London: C. Arthur Pearson.
- Badal, Raphael Koba. 1985. “The Addis Ababa Agreement Ten Years After: An Assessment.” In *Conference on North-South Relations Since the Addis Ababa Agreement*, edited by K.N. Arou and B. Yongo-Bure, 12–39. Khartoum: Institute of African and Asian Studies, University of Khartoum.
- Blower, J.H. 1977. *Wildlife Conservation and Management in Southern Sudan*. FAO Final Report; Project FO: DP/SUD/76/021. Rome: Food and Agricultural Organization.

- Boitani, Luigi. 1981. *The Southern National Park: A Master Plan*. Rome: Istituto di Zoologia, Facolta di Scienze dell Unisversita di Roma Italy.
- Brocklehurst, H.C. 1931. *Game Animals of the Sudan: Their Habitats and Distribution*. Edinburgh: Gurney and Jackson.
- Bulpett, C.W.L. 1907. *A Picnic Party in Wildest Africa: Being a Sketch of a Winter's Trip to Some of the Unknown Waters of the Upper Nile*. London: Edward Arnold.
- Buxton, Edward North. 1902. *Two African Trips: With Notes and Suggestions on Big Game Preservation*. London: Edward Stanford.
- Carruthers, Jane. 1997. "Lessons from South Africa: War and Wildlife Protection in the Southern Sudan." *Environment and History* 3 (3): 299–321.
- Chapman, Abel. 1922. *Savage Sudan: Its Wild Tribes, Big-game and Bird-life*. New York: G.P. Putnam's Sons.
- Cloudsley-Thompson, J.L. 1973. "Developments in the Sudan Parks." *Oryx* 12 (1): 49–52.
- Cobb, Stephen. 1981 "Wildlife in Southern Sudan." *SWARA* 4 (5): 28–31.
- Collins, Robert O. 2008. *A History of Modern Sudan*. Cambridge: Cambridge University Press.
- Comyn, D.C.E. 1911. *Service & Sport in the Sudan*. London: John Lane, the Bodley Head.
- Conflict Armament Research. 2018. *Weapon Supplies into South Sudan's Civil Wars: Regional Re-transfers and International Intermediaries*. London.
- Darling, Fraser F. 1961. *Towards a Game Policy for the Sudan*. New York: Conservation Foundation.
- Day, Christopher. 2020. "Sister Forces: Park Rangers and Regime Security in Africa." *Civil Wars* 22 (2–3): 353–78.
- Dongol, Yogesh, and Roderick P. Neumann. 2021. "State Making through Conservation: The Case of Post-Conflict Nepal." *Political Geography* 85: 102327.
- Duffy, Rosaleen. 2016. "War, by Conservation." *Geoforum* 69: 238–48.
- Rosaleen, Duffy, Francis, Massé, Emile, Smidt, Esther, Marijnen, Bram, Büsher, Judith, Verweijen, Maano, Ramutsindela, Trishant, Simlai, Laure, Joanny, Elizabeth, Lunstrum., 2019. "Why We Must Question the Militarisation of Conservation." *Biological Conservation* 232: 66–73.
- Garside, Adrian. 2021. "Weapon Proliferation Challenges Biodiversity Protection in South Sudan." *Conflict and Environment Observatory*, January 7.
- Graeger, Nina. 1996. "Environmental Security?" *Journal of Peace Research* 33 (1): 109–16.
- Haenlein, Cathy, and M.L.R. Smith, eds. 2016. *Poaching, Wildlife Trafficking, and Security in Africa: Myths and Realities*. Whitehall Paper 86. Royal United Services Institute for Defence and Security Studies.
- Hall, Peter, and Rosemary Taylor, 1996. "Political Science and the Three New Institutionalisms." *Policy Studies* 44 (5): 936–57.
- Happold, D.C.D. 1966. "The Future for Wildlife in the Sudan." *Oryx* 8 (6): 360–73.
- Hoffman, Reinhold R. 1975. *Southern Sudan, Wildlife Conservation Report*. Federal German Government Project 75.2015.8 (GTZ 1975).
- Homer-Dixon, Thomas. 1999. *Environment, Scarcity, and Violence*. Princeton, NJ: Princeton University Press.
- Human Security Baseline Assessment (HSBA) for Sudan and South Sudan. 2013. "David Yau Yau's Rebellion." *Small Arms Survey* (Geneva, Switzerland), June 4.
- International Crisis Group. 2021. *South Sudan: From Independence to Civil War*. Interactive/Africa, July 9.
- . 2017. *Instruments of Pain (II): Conflict and Famine in South Sudan*. Briefing No. 124, April 26.
- . 2018. Video: *The Humanitarian Crisis in South Sudan*, June 20.
- . 2022. *Floods, Displacement and Violence in South Sudan*. Interactive/Africa October 27.
- Johnson, Douglas H., and Gerard Prunier. 1993. "The Foundation and Expansion of the Sudan People's Liberation Army." In *Civil War in the Sudan*, edited by M.W. Daly and Ahmad Alawad Sikainga, 117–41. London: British Academic Press.
- Joyner, LoraKim. 2017. *Conservation in Times of War*. Hollis Hills, NY: One Earth Conservation.
- Kalyvas, Stathis and Laia Balcells. 2012. "Does Warfare Matter? Severity, Duration, and Outcomes of Civil Wars." ICIP Working Paper 2012/5.
- Kasfir, Nelson. 1977. "Southern Sudanese Politics since the Addis Ababa Agreement." *African Affairs* 76 (303): 143–66.
- Kelly, Alice B., and Megan Ybarra. 2016. "Introduction to Themed Issue: 'Green Security in Protected Areas'." *Geoforum* 69: 171–75.

- Kuotwel, Fraser T. 1974. "Existing National Parks and Game Reserves in Southern Sudan." International Union for Conservation of Nature and Natural Resources, Serengeti National Park, Tanzania.
- Larjour Consultancy. 2002. *Report of the Research on the Proliferation and Trafficking in Small Arms and Light Weapons in Yambio, Maridi, Kajo Keji and Yei River Counties, Equatoria, South Sudan*. Nairobi.
- Laws of South Sudan. 2011. *The Wildlife Service Act*.
- Lombard, Louisa. 2015. "The Autonomous Zone Conundrum: Armed Conservation and Rebellion in North-eastern CAR." In *Making Sense of the Central African Republic*, edited by Louisa Lombard and Tatiana Carayannis, 142–65. London: Zed Books.
- Lunstrum, Elizabeth. 2014. "Green Militarization: Anti-Poaching Efforts and the Spatial Contours of Kruger National Park." *Annals of the Association of American Geographers* 104 (4): 816–32.
- Lunstrum, Elizabeth, and Megan, Ybarra., 2018. "Deploying Difference: Security Threat Narratives and State Displacement from Protected Areas." *Conservation & Society* 16 (2): 114–124.
- Machlis, Gary E., and Thor Hanson. 2008. "Warfare Ecology." *Bioscience Magazine* 58 (8): 729–36.
- MacKenzie, John M. 1988. *The Empire of Nature: Hunting, Conservation, and British Imperialism*. Manchester: Manchester University Press.
- Mahoney, James. 2000. "Path Dependence in Historical Sociology." *Theory and Society* 29 (4): 507–48.
- Matthew, Richard A., Mark Halle, and Jason Switzer, eds. 2002. *Conserving the Peace: Resources, Livelihoods, and Security*. Winnipeg, MB: International Institute for Sustainable Development and IUCN – the World Conservation Union.
- Molloy, Peter. 1952. "Game Preservation in the Sudan." *Sudan Wildlife and Sport* 2 (1): 29–33.
- . 1957. *The Cry of the Fish Eagle*. London: Michael Joseph.
- Moore, Gerald K. 1974. *Report to the Government of the Sudan on Wildlife and National Parks Legislation*. Rome: Food and Agriculture Organization.
- Morjan, Malik, Luke Ojok, John Maker, Alfred Ackwoch, Joseph Kamdalla, and Benneth Nicholas. 2000. *A Pilot Survey of Nimule National Park New Sudan*. New Sudan Wildlife Society; New Sudan Wildlife Authority; Kenya Wildlife Service.
- Munro, Paul. 2021. "Colonial Wildlife Conservation and National Parks in Sub-Saharan Africa." In *Oxford Research Encyclopedias: African History*, edited by Thomas Spear. Oxford: Oxford University Press.
- Nabi, Sayyid Ahmed Abdel. 1956. "The Protection of Game in the Sudan." *Sudan Notes and Records* 37: 119–21.
- Neumeister, Celia, and Stella Cooper. 2019. *Money Tree: Teak and Conflict in South Sudan*. C4ADS.
- Nimir, Mutasim Bashir. 1983. *Wildlife Values and Management in Northern Sudan*. PhD diss., Colorado State University.
- O'Brien, Adam. 2009. *Shots in the Dark: The 2008 South Sudan Civilian Disarmament Campaign*. Geneva: The Small Arms Survey, Graduate Institute of International and Development Studies.
- Pearson, Paul. 2004. *Politics in Time: History, Institutions, and Social Analysis*. Princeton, NJ: Princeton University Press.
- Pendle, Naomi. 2018. *Elite Bargains and Political Deals Project: South Sudan Case Study*. London: Stabilisation Unit, UK Government.
- Poggo, Scopas S. 2009. *The First Sudanese Civil War: Africans, Arabs, and Israelis in the Southern Sudan, 1955–1972*. New York: Palgrave Macmillan.
- Prendergast, David K., and William M. Adams. 2004. "Colonial Wildlife Conservation and the Origins of the Society for the Preservation of the Wild Fauna of the Empire (1903–1914)." *Oryx* 37 (2): 251–60.
- Report on the Commission of Inquiry. 1956. *Southern Sudan Disturbances, August 1955*. Khartoum: McCorquedale.
- Republic of South Sudan. 2013. *South Sudan Wildlife Conservation and Protected Area Policy*, Ministry of Wildlife Conservation and Tourism.
- . 2019. *National Biodiversity Strategy and Action Plan (2018–2027)*, Ministry of Environment and Forestry, United Nations Environment Programme.
- Rolandsen, Øystein H. 2011. "A False Start: Between War and Peace in Southern Sudan, 1956–1962." *Journal of African History*, 52: 105–23.
- Schauer, Jeff. 2019. *Wildlife between Empire and Nation in Twentieth-Century Africa*. Cham: Palgrave Macmillan.

- Southern Development Investigation Team. 1955. *The Natural Resources and Development Potential of the Southern Provinces of the Sudan*. Khartoum: Sudan Government Publications Bureau.
- Steinhart, Edward I. 2006. *Black Poachers, White Hunters: A Social History of Hunting in Colonial Kenya*. Oxford: James Currey.
- Sudan Gazette. 1903. "An Ordinance for the Preservation of Wild Animals and Birds." 55 (December): 135–43.
- Sudan Government Gazette. 1935. "The Preservation of Wild Animals Ordinance 1935." 622 (December 1935): Supplement No. 1.
- Sudan People's Liberation Army/Movement. 1994. "A Major Watershed." SPLM/SPLA First National Convention: Resolutions, Appointments, and Protocol. Chukudum, New Sudan.
- . 1999. *SPLM Workshop on the Rehabilitation and Restructuring of Legal Institutions and Law Enforcement Agencies: Resolutions and Recommendations*. New Cush/Himan, April 14–20.
- Thelen, Kathleen. 1999. "Historical Institutionalism in Comparative Politics." *Annual Review of Political Science* 2: 369–404.
- United Nations. 2022. Draft Resolution 77/104, 7. *Protecting the Environment in Relation to Armed Conflict*. November 11.
- Verweijen, Judith, and Esther Marijnen. 2018. "The Counterinsurgency/Conservation Nexus: Guerilla Livelihoods and the Dynamics of Conflict and Violence in the Virunga National Park, Democratic Republic of the Congo." *Journal of Peasant Studies* 45 (2): 300–20.
- Wai, Dunstan M. 1981. *The African-Arab Conflict in the Sudan*. London: Africana Publishing Company.
- Wakoson, Elias Nyamiel. 1984. "The Origin and Development of the Anya-Nya Movement 1955–1972." In *Southern Sudan: Regionalism & Religion*, edited by Mohamed Omer Beshir, 127–201. Khartoum: University of Khartoum.
- Wenyin, Den Awur. 1985. "The Integration of the Anya-Nya into the National Army." In *Conference on North-South Relations Since the Addis Ababa Agreement*, edited by K.N. Arou and B. Yongo-Bure, 57–119. Khartoum: Institute of African and Asian Studies, University of Khartoum.
- Winter, Philip. 2007. "Is South Sudan Really Africa's New Serengeti?" *SWARA* 30 (3): 46–51.
- Woods, Kevin M., and Jared Naimark. 2020. "Conservation as Counterinsurgency: A Case of Ceasefire in a Rebel Forest in Southeast Myanmar." *Political Geography* 83: 479–502.
- World Bank. 2021. *Collaborative Management Partnership: Toolkit (English)*. Washington, DC: World Bank Group.
- Ybarra, Megan. 2012. "Taming the Jungle, Saving the Maya Forest: Sedimented Counterinsurgency Practices in Contemporary Guatemalan Conservation." *Journal of Peasant Studies* 39 (2): 479–502.
- . 2018. *Green Wars: Conservation and Decolonization in the Maya Forest*. Oakland, CA: University of California Press.
- UNEP-WCMC and IUCN. 2024. *Protected Planet: The World Database on Protected Areas (WDPA) and World Database on Other Effective Area-based Conservation Measures (WD-OECM)*. Cambridge, UK: UNEP-WCMC and IUCN.