

# Conservation Meets Militarisation in Kruger National Park: Historical Encounters and Complex Legacies

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## Abstract

Drawing on environmental history and political ecology, this paper contributes to growing debates concerning military-environment encounters and conservation militarisation/securitisation by investigating the complex histories and legacies of these relations. Grounding my insights in South Africa's iconic Kruger National Park, I chart how encounters between environment and military/security activity over the last century offer a repeatedly contradictory picture: military activity, skills, and weapons have harmed wildlife and hence reinforced the need for its protection, and they have simultaneously been deployed in the name of such protection. Furthermore, some of these historical engagements failed to materialise as planned and, as such, provide insight into military-environment frictions as well as nature's ability to thwart militarised interventions. Yet other engagements thrived and resulted in the multi-layered militarisation of Kruger, as both protected area and strategic borderland. Several of these encounters have lived on to shape Kruger's current intensive militarisation tied to rhino poaching, both the state response and poaching itself. Past military activity, in fact, provides an arsenal of enabling factors for current poaching- and conservation-related militarised violence that ultimately proves harmful to conservation efforts.

**Keywords:** conservation, militarisation, securitisation, violence, borderlands, wildlife crime/commercial poaching, refugees, Peace Parks, transboundary conservation, environmental history, Southern Africa

## INTRODUCTION

On an early morning in July 2013, I arrived at the Makhadzi Picnic Site. An unassuming spot, this is the last stop in South Africa's world-renowned Kruger National Park before crossing through the Giryondo Border Post and entering Mozambique's adjacent Limpopo National Park (LNP). Together, Kruger and the LNP form much of the Great Limpopo Transfrontier Park (GLTP), one of the world's foremost Peace Parks (Figure 1). I was there to attend a meeting where high-level Kruger and LNP rangers were discussing how to address the cross-border

aspects of commercial rhino poaching, given that most poachers enter Kruger from Mozambique, many through the LNP. As Kruger has become the world's most intensive site of rhino poaching, much was at stake that morning. While the meeting was a fascinating glimpse into the realities of cross-border wildlife crime and conservation, its location proved equally, although more subtly, riveting.

Makhadzi's visitors are welcome by a thatched-roofed information centre that had opened, along with the picnic site, in 2004 (Figure 2). Upon entering, tourists find a display of artefacts from Steinaecker's Horse, a British military regiment operating in the region during the Anglo Boer War. If one side of the centre speaks of a militarised past, the other side walks visitors straight into the region's projected future. Here, a series of posters provide information on the GLTP, which, established in 2001, is celebrated as rehabilitating the region's ecological integrity and spearheading cross-border cooperation. Especially in light of the archaeological finds illuminating the region's militarised past, what is curiously not on display is the region's and indeed the very picnic site's

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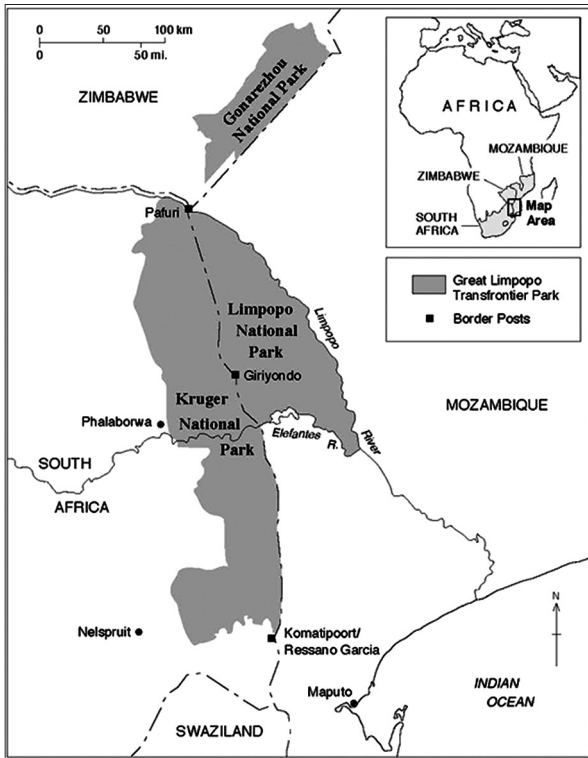


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**Figure 1**  
*Great Limpopo Transfrontier Park (GLTP)*

more recent military history. In the 1980s, Makhadzi was an active military base where South African Defence Force (SADF) soldiers were stationed to stop the cross-border flow of anti-apartheid activists and Mozambican refugees. And other than the presence of paramilitary-trained rangers and a Mozambican military official meeting there that morning, nor did Makhadzi draw any attention to the current militarised state response to rhino poaching.

While the history of military-environment encounters in Kruger is multi-layered—such encounters are routinely complementary but also sometimes contentious—the contours of such a past are not entirely unique. How might we draw from the insights of environmental history and political ecology that attempt to uncover histories of military-environment encounters to help us grasp the complex histories of such encounters in Kruger, including how they have come to shape the current rhino poaching crisis? More broadly, how might this case contribute to growing debates concerning military-environment encounters and conservation militarisation/securitisation by foregrounding and disentangling the complex histories and legacies of these relations? Turning to Kruger, I chart how encounters between environment/conservation and military/security activity over the last century offer a rather contradictory picture: military activity, skills, and weapons have harmed wildlife and reinforced, if not incited, the need for its protection and simultaneously have been deployed in the service of such protection. Furthermore, some of these historical engagements failed to materialise as planned and as such provide insight into frictions between conservation



**Figure 2**  
*The information centre at the Makhadzi Picnic Site, a former SADF military base*

and military activity. Yet other engagements thrived, resulting in the outright militarisation of the park. This reflects Kruger's status as an overdetermined space: both protected area and strategic, often contested borderland. Several of these environment-military encounters have, in fact, lived on to shape the current militarisation tied to rhino poaching, both the state response and poaching itself. Such historical legacies illustrate that military activity can long outlive the conflict from which it emerged to take on new life within contemporary conservation spaces. More specifically, past military activity and security endeavours provide an arsenal of enabling factors for current poaching- and conservation-related militarised violence that ultimately prove harmful to conservation efforts.

After an overview of methods and the literature on military pursuits and the environment with an eye toward the significance of the past, I turn to the military activity shaping Kruger during its infancy. Next, I move on to the Cold War apartheid era to examine the militarisation of Kruger as a strategic borderland battleground, although one in which conservation and militarisation at times stood at odds. Bringing together past and present, I then explore the afterlives of the apartheid-era conflict, showing how this history continues to shape the current militarisation tied to rhino poaching. I close by reflecting on what this history can tell us more broadly about relations between conservation practice and military activity.

## METHODOLOGY

This paper is based on research conducted in Kruger and the LNP in 2009, 2012, and 2013 and supplemented by an earlier round of dissertation research in the LNP (2004-2005) and follow-up conversations in 2014 and 2015. I conducted interviews with current and former park management and rangers at various levels, the head engineer responsible for building the international border fence, project funders, military officers, and LNP residents. I additionally engaged in participant observation of rangers' duties, spending several days with them on patrol in 2009. This offered a view into

how the borderlands with Mozambique are patrolled and into rangers' paramilitary training. I have largely withheld interviewees' names and job titles to protect their identities given the often sensitive nature of our discussions. The paper also draws on documents generously provided by park officials and collected online and at various resource centres, including the TFCA resource centre in Maputo and Kruger's Stevenson-Hamilton Memorial Library and archives. While their perspective would be valuable, I could not interview current or former poachers due to increased rhino poaching and its ties to organised crime. Also, a note on the word 'poaching'. While I do not wish to defend the illicit commercial hunting of rhinos and elephants, the term 'poaching' has problematic roots: it reflects the criminalisation of African hunting practices deeply rooted in colonial histories of dispossession. For the ease of reading, I have chosen not to place poaching in quotation marks to highlight this history, but I do ask readers to be aware of this.

## ARGUMENT

### Environment, conservation, and militarisation: complex encounters and legacies

Environmental history and political ecology over the past several years have produced a rich body of scholarship aimed at investigating histories of military environments and related encounters between military activity and the environment. A core theme of the literature highlights the environmentally destructive nature of conflict in general and of militaries in times of both war and peace. This begins with the fact that armies engage in environmental destruction as an explicit tactic of war, a phenomenon Westing (1984) has labelled "environmental warfare". Often amounting to scorched earth policies, armies across the ages have destroyed landscapes and resources to deny enemies food, shelter, and tactical cover (Westing 1975; Isenberg 2000; Dudley et al. 2002; Tucker and Russell 2004; Hupy 2008; Bankoff 2010; McNeill and Unger 2010; Brady 2012). Military activity has equally destroyed environments indirectly. From the extraction of resources needed to construct military infrastructure, weapons, and vehicles to the production of food to feed soldiers, wartime extractive economies and the commodity chains in which they flow have proven environmentally harmful (Tucker and Russell 2004; Bankoff 2010; Evenden 2011; Muscolino 2011). Particularly important from a conservation perspective are the ways in which resources like wildlife and timber, just as diamonds and oil, have been 'harvested' and sold to finance hostilities, including the procurement of weapons (Ellis 1994; Tucker and Russell 2004; Bankoff 2010; Le Billon 2012). Although never the sole cause of conflict, high value natural resources can themselves provoke hostilities (Le Billon 2012). Conflict has equally destroyed environments in the form of collateral damage. While wildlife, for instance, can be caught in the crossfire of conflict (Bankoff 2010), much more expansive environmental damage is tied to military weapons testing. In addition, just as refugee

movement can be compelled by war-induced environmental disasters (Muscolino 2011), refugees can themselves cause ecological harm while fleeing conflict or during their settlement in and near refugee camps by overexploiting natural resources, especially forest resources (Leach 1992; Dudley et al. 2002; Glew and Hudson 2007; Bankoff 2010).

While these practices can all prove immediately ecologically devastating, a historical perspective valuably illustrates how their impacts can outlive conflict. This begins with wildlife finding it difficult to recover from wartime hunting and habitat destruction and the related proliferation of weapons used in illicit hunting even after hostilities die down (Dudley et al. 2002; Loucks et al. 2009). In addition, the testing of military weapons, especially nuclear weapons, and unexploded ordnances left on military bases have created sacrifice zones in which human communities and wildlife habitat alike are irrevocably altered if not destroyed indefinitely (Kuletz 1998; Solnit 1999; Hooks and Smith 2004; Josephson 2010; Merlin and Gonzalez 2010). Militarised conflict and weapons can hence outlive the anxieties from which they emerged to wreak socioecological havoc for years, if not generations, to come. In other words, a historical perspective shows how the contemporary environmental impacts of war are unprecedented across space but also time (Hupy 2008).

While not denying military activity's propensity for environmental harm, even early environmental historical studies examined more complex and certainly less straightforward facets of military-environment interactions. For instance, in his seminal work *War and Nature*, Russell (2001: 2) investigates the historical interaction between chemical warfare and pest control to show how "war and the control of nature co-evolved: the control of nature expanded the scale of war, and war expanded the scale on which people controlled nature." Other work has turned to the seemingly more positive—albeit largely unintentional—environmental outcomes of conflict. For instance, conflict can empty environments of humans and their damage-causing activities, allowing non-human nature to thrive. Telling examples are often found within contested border zones (Martin and Szuter 1999). One particularly compelling site is the Korean Demilitarised Zone (DMZ), a no-go zone between North and South Korea. It has emerged as one of the world's most ecologically distinct landscapes precisely because decades of political hostility have precluded other environmentally harmful activities such as commercial development and agriculture (Bankoff 2010; Thomas 2010; Coates 2014). As Thomas (2010: 161) observes, "The paradox is that the preservation of [resident] beasts, birds, fish, fungi, meadows, rivers, seas and forests has so far rested not with environmentalists but with armies... Cold animosity preserves biodiversity." Reflecting the lengthy nature of the Korean hostilities, it is the indefinite nature of this conflict that has enabled this rich ecosystem to thrive indefinitely. Similarly, Coates (2014: 505) examines how the European "Death Belt," a no-go border zone of the Cold War, has turned into an "unlikely sanctuary" in which long-abandoned military infrastructure has taken on a new life as home to rare mosses and bats.

Just as military bases and their surroundings are sites of environmental harm, they too can simultaneously protect biodiversity precisely because military activity bars other ecologically destructive practices (Tucker and Russell 2004; Havlick 2011; Dudley 2012). If much of this environmental protection was initially accidental, Dudley (2012) shows how the UK's Ministry of Defence has taken steps to actively protect these on-base resources, what amounts to both a greenwashing of military activity and very real environmental protection (also see Woodward 2004). We can add to these examples military to wildlife (M2W) reserves in which decommissioned military bases are transformed into wildlife refuges (Wills 2001; Davis et al. 2007; Havlick 2011; Krupar 2011). In generating welcome green press for militaries, these sites mask the destructive practices of militaries elsewhere and conceal the fact that environmentally harmful pollutants, often radioactive, endure. The transformation from military site to nature, moreover, involves an historical erasure, one of evidence of such pollution as well as the military activity that produced it (Havlick 2011; Krupar 2011).

A more welcome relationship between military activity and conservation can be found in Peace Parks. As protected areas that straddle international borders, these stand as signs of goodwill between member countries and enable opportunities for cross-border collaboration. While critics argue these projects can produce new struggles and tensions (Ali 2007; Spierenburg et al. 2008; Büscher 2013; Lunstrum 2013; Schoon 2013; Witter 2013), in theory they harness the political power of conservation to undo histories of violence and realise more peaceful futures (Mandela 2001; Mbeki 2006; Ali 2007). Hence nature, particularly nature found in borderlands, is enrolled to heal past and prevent future hostilities.

Charting an additional link between conservation and military activity, conservation practice itself routinely and increasingly employs military technologies, skills, and personnel. What Lunstrum (2014) terms "green militarisation", this has emerged as a key facet of a larger trend in the securitisation of conservation practice (Kelly and Ybarra in press; Massé and Lunstrum in press). Conservation officers have long come with military backgrounds, skills, tactics, and discipline to police conservation areas, encounter dangerous game, and evict local populations (MacKenzie 1988; Ellis 1994; Carruthers 1995; Spence 1999; Devine 2014). But with the rise of commercial poaching in the 1980s and a growing discourse of the 'war to save biodiversity', rangers began to undergo more intensive paramilitary training. In extreme cases, this translated into shoot-on-sight policies (Neumann 2004; Duffy 2010). Recently we have seen an intensification of both military metaphors of war and the use of militarised conservation practices and technologies (Koh and Wich 2012; Warchol and Kapla 2012; Duffy 2014; Lunstrum 2014). Recent scholarship has additionally investigated how the spatial contours of conservation spaces shape militarisation, how poaching is constructed as a national security issue routinely with links to terrorism, and how green militarisation and conservation securitisation more broadly are likely to backfire (Duffy 2014;

Humphreys and Smith 2014; Lunstrum 2014). Emerging historical perspectives are also instructive here, with scholars investigating how military-backed conservation in Guatemala emerged in part from civil-war era counterinsurgency efforts (Ybarra 2012; Devine 2014) and how armies more broadly have been reinvented in post-conflict eras as conservation enforcers (ibid; Lunstrum 2014).

How might we draw from and extend these insights, foregrounding in particular the complex histories and legacies of environment/conservation and military/security relations? Turning to South Africa's Kruger National Park, I show how military interventions, actors, and weapons repeatedly proved environmentally harmful while they were simultaneously deployed in the name of conservation. The result is a recurrently contradictory picture of military-conservation relations within a single site. In addition, I illustrate how under apartheid Kruger became a heavily militarised landscape, reflective not only of its status as a protected area but also its location as a strategic, contested borderland. The case highlights how borderland protected areas can be overdetermined: they can be shaped by multiple commitments and anxieties, often in ways that invite military intervention. Such intervention, however, is not always a smooth process: conservation commitments and actors in Kruger have often come into conflict with their military counterparts, underscoring an imperfect fit between the two even in cases of outright green militarisation. I illustrate how these tensions are most clearly manifest in unsuccessful military plans. These failures, moreover, equally highlight nature's ability to resist military intervention. And perhaps most importantly, I show how several military-environment encounters have outlived the conflict from which they emerged to enable current poaching and anti-poaching militarised violence. Both ultimately harm conservation measures, hence drawing into question scholarship that risks overemphasising conflict's positive environmental impact.

### **The early history of Kruger: nascent encounters between conservation and militarisation**

On the heels of the arrival of European hunting parties and the spread of European settlement came the large-scale loss of wildlife across what is today South Africa, beginning in the mid-nineteenth century. While Africans were often blamed, responsibility predominantly fell with European hunters, with their advanced firearms and market economy. By the end of the century, overhunting along with the 1896 rinderpest epizootic left wildlife numbers so low in the Transvaal region that there was genuine concern that wildlife could be wiped out entirely. This loss both undermined African economies and set the stage for South Africa's conservation movement. Emerging from the latter and further detrimental to the former was the proclamation of the Sabi and Singwitsi Game Reserves, which were combined in 1926 to form Kruger National Park (Carruthers 1995).

The turn of the century was equally shaped by the military consolidation of territory. During the Second Anglo-Boer

War (1899-1902), the British defeated Afrikaans-speaking descendants of Dutch Settlers to take control of the Orange Free State and Transvaal Republic (Pakenham 1994). As part of its territorial strategy, the British set up military and civilian posts in the eastern Transvaal. By 1901, evidence emerged that British military authorities were issuing game hunting permits without necessary licenses and that hunting was occurring even within the fragile Sabi Game Reserve. Pretoria responded by banning soldiers from hunting. Met with extensive compliance, one major exception came from Steinaecker's Horse, an irregular military regiment deployed to protect the international border from Afrikaners making contact with sympathisers in Portuguese East Africa (today Mozambique). Steinaecker's members continued to poach game for food and to provide goods at a profit for the European trophy market (Carruthers 1995; Joubert 2007; also see Vollenhoven et al. 1998).

As this military-led destruction of already precarious wildlife articulated with a desire to protect the region's remaining animals, such military activity played a role in prompting the creation of conservation spaces like Kruger's predecessor reserves. Their establishment thus amounted to a greening of former military stomping grounds, a pattern similar to more recent instances of greening decommissioned military landscapes including M2W projects. Furthermore, as Carruthers (1995) chronicles, central to the creation of Kruger was a sense that the national park would help build common ground between warring British and Afrikaner factions, even and especially while excluding Africans. Conservation was hence harnessed as a political vehicle, making Kruger an early example of a Peace Park, albeit a deeply racially exclusionary one.

Furthermore, many of the Transvaal's early conservation officials arrived with impressive military backgrounds and related skills useful in implementing conservation, a trend we see throughout and beyond colonial Africa. In fact, Kruger's first warden James Stevenson-Hamilton was a former military officer with exploits spanning large stretches of the British Empire. Military trained conservation officers, including former members of Steinaecker's Horse, brought military discipline and skills to organise the Sabi and Singwitsi reserves in a paramilitary fashion, confront dangerous game, and evict from Sabi many of the African families "as rapidly and methodologically as possible" (Pienaar 1981: 11; also see Stevenson-Hamilton 1993 [1937]; Carruthers 1995; Carruthers 2001). Such eviction was seen as necessary for both making space for wildlife and forcing displaced Africans into wage labour, with those allowed to stay being forced to work for the park (Carruthers 1995). In short, even in the pre- and early days of Kruger, along with the early days of modern South Africa, we begin to see an ambivalent, even contradictory relationship between military activity and conservation.

### **The apartheid era: the militarisation of Kruger**

In light of the apartheid government's self-preservation efforts rooted within broader anticolonial and Cold War

hostilities, Kruger became an overtly militarised landscape, although this did not unfold without incident. When the Afrikaner-dominated National Party came to power in 1948, instituting draconian apartheid policies that formalised and further entrenched existing racial discrimination, it did not stand uncontested. By the 1960s, relatively peaceful protests against the regime became more militant. This was organised largely by Umkhonto we Sizwe (MK for short), which was the military wing of the African National Congress (ANC) and South African Communist Party (SACP). MK was assisted and sheltered by Mozambique's revolutionary movement Frelimo (Front for the Liberation of Mozambique), which sought independence from Portugal and the implementation of a Marxist-socialist, anti-colonial, anti-apartheid government (Ellis and Sechaba 1992; Ellis 1994).

Given its long border with Mozambique in a zone loyal to Frelimo, Kruger's borderland location was nothing if not strategic. It stood between Mozambique and the economic and political centre of the apartheid regime, including Johannesburg and Pretoria. As Mozambique inched closer to independence in the 1970s, emerging victorious in 1975, Kruger was brought squarely into the fight for the future of the subcontinent, with military interests increasingly coming to shape the park. In 1973 the military arm of the apartheid state, the South African Defence Force (SADF), established a Kruger Park Commando as part of its regional defence strategy, which was commanded by Kruger Warden Dr. Tol Pienaar. And by mid-decade, rangers were patrolling the international border. For both Kruger's administration and rangers, conservation and military duties hence began to blur. This was accompanied by the manifold entry of the Army proper into Kruger: by 1977 a Permanent Force SADF Officer was stationed at Kruger's nerve centre Skukuza, and soldiers were deployed at N'wanetsi, the latter marking the beginning of the Army's presence within the park along the international border (Interviews 2009, 2012; Joubert 2007). This soon intensified with the construction of the international border fence and related Sisal Line.

Due to increasing hostilities, SADF insisted that the international border between South Africa and Mozambique be fenced. The demand was strongly supported by the Kruger administration, which had long wanted the entire park enclosed on conservation grounds. Aimed at both protecting wildlife by preventing its movement into Mozambique and clearly demarcating the international border in the face of a potentially hostile neighbour, this "politically motivated" fence was put up in record time (Interviews 2009, 2012). As the project's senior engineer recalled:

We built that fence at a kilometre a day, 800 people on the job. And that included [the fact] that there were no roads—we had to do everything from scratch... We started in September 1974, and in April '76 it was completed... It's one of those funny things in life that happens, you don't realise until you start looking at it: [the fence was] 353 km [long and] was built in 353 working days (Interview 2009).

Hence militarisation and conservation had mapped neatly together to quickly effect the simultaneous fencing of Kruger and the international border.

The fence was soon to be supplemented by the Sisal Line. Completed in 1979 and inspired by Israeli defence strategies, it consisted of planting a wide stretch of near-impenetrable sisal plants (*Agave sisalana*) to stop the cross-border movement of MK insurgents (Interviews 2009, 2012). The park administration and Army agreed on the efficacy of the border fence but stood at odds with the Sisal Line. As a senior ranger working in Kruger at the time recalled:

Dr. Pienaar, he had standing [fights] with the military in those days. You're wasting tax payers' money and effort. There were millions of Rand spent... There were 13 rows [of sisal] planted a meter from each other. And the idea was to have this green fence. So what happened, as they were planted, the Kruger National Park wildlife non-predators, plant-eating animals said, "Thank you kindly," and they harvested them... [F]rom Crocodile Bridge right up to Pafuri, the whole of Kruger, was covered with that sisal plant. This is an *alien* to us anyway. We just [warned the Army]... "the animals are going to see to it." The elephants kicked them out and ate them, and baboons and warthogs, and kudu, and you name it. They were all over those plants. And it turned out to be a huge flop. But of course we warned them and they wouldn't listen. The military was very adamant and... forceful in those days... So that never materialised, [this plan] that was going to stop [insurgents] from coming in (Interview 2009).

Such sentiments, especially regarding the invasiveness of sisal, were shared by Warden Pienaar who derided the Sisal Line in general and the plant itself as a "piss plant" the park administration had long tried to eradicate (Interview 2009). Even the head engineer in charge of building the border fence recalled the frustration of trying to argue with a recalcitrant military, explaining the Sisal Line:

...was one of the biggest jokes... We told [the Army], "this is stupid," but you don't change their minds... At that time they were the masters... Make no mistake, the Prime Minister Pieter Botha, he was the Ex-Minister of Defence. So it was an Army government almost. And they did what they liked. We hated it, but it's one of those things you don't argue against (Interview 2009).

Such argument would in fact have proven futile on account of legislation that gave the Army control of a 10 km stretch of territory along all of South Africa's borders, including those areas falling within Kruger (Interview 2012).

This *failed* military project has several implications for grasping conservation-military relations. First, the Sisal Line emerges as a green fence, suggesting ways in which nature is harnessed in the name of military efforts. While not the high-tech

use of nature as seen in the techno-scientific use of honey bees (Kosek 2010), it draws attention to how militarised practices do not merely destroy or protect nature but actively mobilise it for strategic ends. Indeed, military encounters help produce nature (Davis 2007), here in the form of dense rows of sisal. Additionally it draws attention to nature's agency, specifically to how wildlife can actively frustrate border enforcement (Sundberg 2011) as well as military plans. The Sisal Line equally underscores an uncomfortable fit between conservation and military interests within the state. Conservation officers at the time, ranging from critical to supportive of the state's apartheid policies (Interviews 2009, 2012), were unwilling to support a military effort they saw as both ineffective and antithetical to conservation, as sisal was an invasive species. And while military concerns trumped conservation concerns, the latter had the last laugh as wildlife devoured the last tasty bite of sisal.

The project's dismal failure, however, did not end attempts to militarise Kruger. Rather, the Army began to further consolidate control of the park to stop the movement of anti-apartheid activists and, increasingly, refugees. The South African state and its military arm began to support the guerilla organisation Renamo (Mozambican National Resistance) inside Mozambique in its efforts to destabilise the Frelimo government, inciting the brutal Mozambican 'civil' war (Vines 1991; Lunstrum 2009). This chain of events ricocheted back into South Africa—and Kruger—in the form of thousands of Mozambican refugees seeking to escape the war-induced terror. Rather than ending its (increasingly clandestine) support of Renamo, SADF instead fortified the border, strengthening ties between the Army and park. In 1985 SADF began to take over bases occupied by the South African Police and enlisted the support of Kruger's rangers to help capture refugees. As a game ranger explained, the name of the operation was Operation Pebble as if rangers were picking up refugees like they were pebbles. Once arrested, refugees would be questioned, particularly to see if they might be anti-apartheid activists, then searched for weapons and deported (Interview 2013; also see Joubert 2007). While partially reflecting concerns that refugees were causing environmental harm, their arrest and the military build-up put in place to stop them had more to do with state security concerns—i.e., stopping cross-border anti-apartheid activism—along with concerns for the refugees' own safety, given that many did lose their lives during encounters with lions and elephants (Interviews 2009, 2012, 2013). Furthermore, one ranger recalled with a sense of deep remorse that rangers at the time actually used wildlife capturing nets to apprehend refugees (Interviews 2012, 2013). Conservation tools were hence used for explicitly military ends.

Operation Pebble was soon to be augmented by a military plan to electrify the international border fence between the Crocodile and Sabi Rivers within Kruger with non-lethal current. This is in contrast to SADF's initial plan to build a lethally electrified, razor-wire fence, named Caftan I, similar to the fence built just south of Kruger. As the former Director of Kruger explained, the park administration objected to this mostly on humanitarian grounds as it did not want to see "anyone electrocuted on our border" (Interview 2012). Yet

environmental concerns also shaped the administration's reluctance. The proposed Caftan I fence, explained the Director, would have meant:

A huge ground force of military personnel, because they had to not only monitor what was going on with the fence... but that they could also immediately send a reaction force so that if there was any interference with the fence, that they could immediately inspect it and immediately have a force available that could confront any kind of incursion there. So you could imagine how many people they needed for that on our eastern border. It was a lethal fence, and also it was a broad strip that was cleared of all its vegetation, and I absolutely shudder just to think of that. We did not want that... It would have had a huge impact on the *tranquillity and unspoiled nature* of a large part of Kruger National Park. So we were really violently opposed to that (emphasis added) (Interview 2012).

Unlike the “standing fights” with the Army over the Sisal Line, the Army took these concerns seriously and accepted a much less environmentally destructive and non-lethal fence. One ranger attributed this to the presence of a more-cooperative military leader (Interview 2012). Hence, environmental and larger humanitarian concerns had begun to shape military policy within Kruger. The downgraded fence, however, never materialised in part due to improving relations between the two countries in the early 1990s as the war in Mozambique and apartheid were coming to an end.

Even as military and conservation officers were debating the Caftan fence, refugees continued moving through Kruger, prompting a call for a stronger military presence and much tighter integration of SADF and Kruger personnel. These were implemented under the rubric of the Kruger Park Security Plan approved in the mid-1980s. Consequently SADF established five military bases *inside* Kruger: Masokosa Pan, Nkongoma, Shishangani, Makhadzi, and the KNP Commando Headquarters on the Sand River. Completed between 1989 and 1991, these were located mostly near the Mozambican border (Interviews 2009, 2012; Joubert 2007). In the refashioned conservation-recreation site of Makhadzi, similar to M2W reserves, much of this history has been erased. Yet traces remain. Just before arriving at the picnic site, there is an odd clearing in the Mopani bushveld (Figure 3). A senior park ranger explained, “That’s where [the Army] kept horses. They had a company of horsemen here, all in an effort to pick up [refugees] because, among them, could have been... crooks and criminals and military personnel and spies and whatever.” “But with all that manpower,” he added, the Army was “never effective... there were always people crossing in the park” (Interview 2009). Even clearer signs of former Army activity are found in abandoned bases like Masokosa Pan where deteriorating buildings, many overtaken by wildlife, are encircled by a long-ago-trampled perimeter fence (Figure 4). In contrast, the heavily fortified fence surrounding the base's jail, which confined potential insurgents and refugees, stands

in perfect repair despite two decades of disuse (Figure 5). On a visit there in 2009, a Section Ranger declined my request to see inside one of the buildings, explaining that the last time he entered he was confronted by a leopard feeding on an impala.



**Figure 3**  
*Clearing where the SADF kept its horses at the former Makhadzi Military Base (photo by author 2013)*



**Figure 4**  
*Buildings at the abandoned Masokosapan Military Base within Kruger, located near the Mozambican border (photo by author 2009)*



**Figure 5**  
*Masokosapan's jail surrounded by a still-intact razor-wire fence (photo by author 2009)*

Such relics are evidence of how nature, here in the form of wildlife, can transform abandoned military infrastructure into habitat as Coates (2014) has noted, as well as evidence of the military's penetration deep into Kruger as a borderland conservation space.

In contrast to these residues and no longer traceable, the SADF brought into Kruger long-distance artillery and pointed it directly at Mozambique during the hostilities. One ranger recalled this was the result of a well-prepared Army that was "actually expecting something to happen from that side, which for reasons I will never know never materialised" (Interview 2012).<sup>1</sup> Others have noted that Renamo troops and supplies were likely transported through Kruger (Ellis 1994). Taken together, such military activity reshaped Kruger into a strategic militarised buffer zone, even while it remained a popular tourist destination.

By the 1980s, a more intricate stitching together of conservation and militarisation appeared: the ranger force itself was paramilitarised. This was firmly tied to the regional conflict but more squarely centered on conservation, namely the rise in commercial elephant poaching. Starting along Kruger's eastern border in 1981, by February 1983 141 elephants had been shot for their tusks. Poaching began to spread further into Kruger along the international border even after seven poachers were killed and an ex-SADF soldier established an anti-poaching hit-team. It became clear the poachers were entering the park from Mozambique, many were Mozambican soldiers (both Renamo and Frelimo), and they were being assisted by some of Kruger's field rangers. After the removal of all field rangers from the problem area, the park administration briefly turned to SADF soldiers for help but found them ill-prepared for work in the bush and even scared of wildlife. It subsequently turned to its own field rangers, transforming them into a paramilitary anti-poaching unit (Interviews 2012, 2013; Joubert 2007). Reflecting back on this pivotal moment, a senior Kruger official and former military officer explained in detail:

We were not really in the position to face this situation [of elephant poaching]. We had to make quick plans to convert our field rangers from [the] colonial era into this kind of era: wearing sandals and old colonial uniforms, to more or less this kind of military-type uniform, and issue them with the appropriate kind of firearms, train them in these kinds of skills, etc. etc. There are four factors that you need for a successful ranger corps [which we developed in our corps at the time]. You need proper training. Well-trained, well-equipped, well-disciplined, and well-motivated people... And we actually used military skills, referred to as paramilitary skills. Paramilitary means skills similar to military skills—just a prefix. And [we] converted our field rangers to almost military personnel, with all the necessary skills and equipment. [The administration] improved the salaries, accommodation improved, equipment in general [improved]: vehicles [improved], and now

there's even helicopters, fixed wing planes... [This paramilitary training involved] basic techniques, firearms skills, camouflage and concealment, basic knowledge of conservation ethics and skills, and a few others. [They also received training in] first aid, radio communications, how to use airplanes, and embark and debark here, getting out of this fix and so on without shooting the top off... things like that. And then firearm skills. Because people coming in, even now actually, they're not scared to put up a fight. So unfortunately it's one of those ugly things in conservation, you have to fight back (Interview 2012).

Mirroring the paramilitarisation of rangers across Africa in the 1980s, Kruger's ranger corps was thus reinvented from a colonial style conservation force into something much more well-trained, well-disciplined, and dangerous: a paramilitary force equipped to take on well-armed elephant poachers.

Elephant poaching and state actions to counter it were directly tied to the militarised conflict. First, poaching was enabled by the proliferation of arms, especially AK-47s, across Mozambique. While inefficient, these were routinely used to hunt elephants (Interviews 2009, 2012). Perhaps more disturbingly, as a former ranger explained (Interview 2012) and documented elsewhere (Ellis 1994; Kumleben Commission 1996), some of the ivory was poached by Renamo troops in order to pay the SADF for weaponry. Although poaching activity was largely taking place in Mozambique (and Angola), there is evidence it may have spilled into Kruger. As one former ranger explained, Kruger's rangers were told periodically not to enter certain areas of the park, especially the Shingwedzi area near Mapai, so that Renamo soldiers could "harvest" some of Kruger's elephants. He added with agitation that rangers were "led by the nose" by Kruger's higher administration, which surely knew this was happening (Interviews 2009, 2012), although a high-ranking member of the park Management Board strenuously denied such a possibility (pers. comm. 2014). Furthermore, the lucrative economy in commercial elephant poaching flourished because the war destroyed economic opportunities and further entrenched poverty in Mozambique. This underscores that addressing cross-border poaching depends on recognising dynamics on the other side of the border, including the presence of poverty (Groff and Axelrod 2013) as well as those factors that provoked it, in this case military destabilisation.

By the late 1980s, as the tension with Mozambique continued, the Kruger administration itself pushed for a deeper integration of conservation and military operations via the Kruger Park Security Plan, which would enable senior Kruger officials to control military operations inside the park. "We could not wish [the military] away," explained a former member of the Management Board, "But we said, if we could just get full control over their operations, so that we knew all about their movements, where they were, and in fact, participate in the deployment of the military staff, then we could at least achieve something" (Interview 2012). As the plan



unfolded, many of Kruger's rangers worked simultaneously as commissioned military officers, with their duties jointly including environmental protection and defending South Africa against anti-apartheid activism. While elements of the plan were instituted, it eventually faded as the larger conflict was dying down (Interview 2012; Joubert 2007). More broadly, like the early history of Kruger, the apartheid era witnessed and indeed incited a contradictory relation between military activity and the environment, with the former both harming and being mobilised to protect the latter.

Even before the regional conflict came to an end, government officials and private interests were manoeuvring to take the relationship between conflict and conservation in a new direction, i.e., harness conservation to enable post-conflict cooperation. Their deliberations led to the 2002 creation of the region's foremost Peace Park, the Great Limpopo Transfrontier Park (GLTP). This ambitious project united Kruger with Mozambique's newly created Limpopo National Park (LNP) and Zimbabwe's Gonarezhou National Park along with several smaller conservation areas (Interviews 2004-2005, 2012). Official celebrations of the GLTP as a Peace Park while sometimes mentioning the troubling history of apartheid (Mandela 2001; Mbeki 2006), surprisingly neglect the militarisation of Kruger during this period. Such history, however, still very much matters, especially in the context of current rhino poaching.

### Contemporary rhino poaching and the current militarisation of Kruger

Today's Kruger remains the crown jewel of the South African national park system, significant both ecologically and economically. It also still shares a long border with Mozambique. Recently, this border has been transformed through the development of the GLTP. This has led to the removal of large stretches of the apartheid-era fence, which enables the free movement of wildlife, and the opening of the Giriyondo Border Post inviting the cross-border movement of tourists (Figure 1) (Lunstrum 2013; Lunstrum Forthcoming). The border is equally the site of more nefarious activity: namely the rapid growth in commercial rhino poaching beginning in 2007. While rhinos are killed in South Africa—the majority in Kruger reflecting its status as the world's most concentrated site of rhino—the vast majority of poachers originate from Mozambique, and poaching syndicates are increasingly using Mozambican ports to ship rhino horn to Asia, where it can fetch prices of USD\$65,000/kg. There is also a shared sense that the Mozambican government has, up until recently, done little to respond (Interviews 2012, 2013).

Over 1,000 rhinos in South Africa were lost to poaching in 2014 alone, the majority in Kruger. The crisis has prompted a *dual* militarisation within Kruger—by poaching teams and the state's (para)military response. On the poaching side, a number of poachers from both Mozambique and South Africa bring to their trade militarised training as former or current members of national armies, Mozambican border patrol, and

even current paramilitary-style trained rangers (Interviews 2012, 2013). Recent incidents, moreover, suggest that poachers are becoming particularly brazen as they use these skills to attack park rangers and soldiers in hopes of evading arrest (Interviews 2012, 2013).

While the state's response to commercial poaching is multifaceted, in Kruger it has taken a militarised path. Kruger's parent organisation South Africa National Parks (SANParks) is introducing an additional 150 rangers inside Kruger who receive paramilitary anti-poaching training, such as increased tactical skills to operate more stealthily in smaller teams. They are supported by the Environmental Crime Investigation (ECI) Unit, a dedicated paramilitary anti-poaching entity equipped for longer-term covert operations within Kruger and intelligence gathering beyond park borders (Interviews 2009, 2012, 2013; SANParks 2015). This signals an important shift in rangers' duties from monitoring the general ecological health of the landscape to an almost all-consuming focus on countering commercial poaching (Interviews 2012, 2013). In addition, SANParks has entered into partnerships with military firms that have been providing logistical services and air surveillance technologies, including a drone and military-spec helicopter with night vision capabilities. Further consolidating these efforts is the 2012 hiring of retired Army Major General Johan Jooste, who coordinates Kruger's anti-poaching efforts (SANParks 2013; Humphreys and Smith 2014; Lunstrum 2014).

An even greater push to suture military and conservation practice comes from the Army itself. In April 2011, the South African National Defence Force (SANDF), which replaced SADF under the newly democratic South Africa, returned to Kruger after several years' absence to take over border protection from the South African Police Service. It has deployed three companies inside Kruger. Like other soldiers, they receive combat and mission training. Like rangers, they are trained in bush survival and tracking skills of both wildlife and humans. Today SANDF patrols Kruger's border with Mozambique in joint patrols with park rangers. The Army's re-entry into Kruger is explained not only by the rise of highly militarised poaching but also the fact that, with the end of apartheid and hence anti-apartheid activism, SANDF faced a crisis of legitimacy (Piombo 2013). It hence worked to re-invent itself by returning to the protection of South Africa's land borders and by moving into conservation by assisting with anti-poaching measures. Therefore, it is not merely that the Army has helped further militarise Kruger as a borderland conservation landscape—it has worked to reinvent itself and its legitimacy in the process.

As militarised anti-poaching and poaching forces collide, the result is a conservation-inflected arms race, yielding a dangerous space for both parties (Lunstrum 2014). While rangers have been shot at, none so far have been killed by poachers. In stark contrast, over 300 suspected poachers have been killed in South Africa between 2008 and 2013 in shoot-outs with park rangers and soldiers, with 47 killed in Kruger in 2013 (MacLeod and Valoi 2013; Anderson and Jooste 2014). During an interview in 2012, a senior

anti-poaching officer displayed several photos of suspected poachers who had been shot and killed, graphically exposing the consequences of a militarised practice responded to with militarised force and greater precision. While SANParks, to its credit, does not glorify these deaths (nor does it endorse shoot-on-sight policies), it has not tried to mask them either, with the numbers standing as a warning to potential poachers. These militarised disincentives, however, do not seem to be working. In the words of former SANParks CEO David Mabunda, rhino poachers “go back [home] in body bags, but still they keep coming” (quoted in Marshall 2012). In addition, the heavy handed militarised approach appears to be backfiring. Successful long-term conservation requires the support of communities surrounding protected areas. In killing suspected poachers, many from the communities on the Mozambican side of the border, the militarised response erodes possibilities for healthy people-park relationships and harms conservation efforts in the long run (Interviews 2012, 2013, 2014; Lunstrum 2014).

### Linking past and present: Legacies and reiterations of militarisation

The history of militarised conflict within Kruger has implications for both contemporary poaching- and anti-poaching-related militarisation. To begin, the past provides a deep reservoir of enabling factors for militarisation to thrive within both realms, highlighting the consequential legacy of conflict. As discussed above, at the height of apartheid, Kruger rested within a cross-border region immersed in conflict and the soldiers and weapons that sustained it. Some of these soldiers on the Mozambican side have given their military skills a new life in the realm of rhino poaching (Interviews 2012). Furthermore, at the end of the Mozambican war in 1994, the country was awash with powerful military weapons. State officials and non-governmental organisations (NGOs) worked to collect and decommission these immediately after the war and again when Mozambique’s LNP was opened in 2001 (Interviews 2004-2005). Despite such efforts, some of the weapons, including AK-47 assault rifles, remained behind. And they have re-entered Kruger. Their purpose is not to pierce the flesh of rhinos—high-powered hunting rifles are given that task—but rather to act as protection against rangers and soldiers deployed to defend the animals (Interviews 2009, 2012). While the conflict might be over, remnants endure and are reintroduced to take on a new life in this never fully demilitarised conservation space.

The past conflict lingers on in a more subtle way as well. The apartheid-backed conflict grossly exacerbated already-entrenched poverty across Mozambique, as South-African backed Renamo troops destroyed villages and livelihoods as part of their destabilisation campaign and as Frelimo worked to squash dissent (Interviews 2004-05, 2009, 2012; Vines 1991; Lunstrum 2009). Like the AK-47s, this conflict-induced poverty has come to shape rhino poaching. With few other comparable economic options, poaching has

emerged as a source of immense economic gain, echoing broader trends in which poverty is a driver on poaching’s supply side (Wittemyer 2011; Knapp 2012; Groff and Axelrod 2013). In fact, there is unmistakable evidence that rhino poaching has ameliorated some level of poverty in the Mozambican borderlands adjacent to Kruger. Some of those involved in poaching have amassed individual wealth and have been able to purchase previously unattainable expensive consumer goods such as 4x4 trucks. Others have spread their fortunes to their communities. One man is known openly as a local Robin Hood, taking from Kruger’s wealth, embodied in rhinos, and redistributing it to his village (Interviews 2012, 2013). In short, as the apartheid-backed war contributed to the lingering poverty of rural Mozambique, we can again see a way in which this history of militarisation lives on, haunting Kruger and placing its rhinos, rangers, and poachers in harm’s way.

Historical trajectories of militarisation also shape the state-side response to poaching. Most obviously, the ranger force recreated in the 1980s in response to commercial elephant poaching has *remained* a paramilitary force. In fact, the arms race around rhino poaching can be traced directly back to this pivotal moment. Rangers in the 1980s became a paramilitary force in response to heavily armed elephant poachers, many of whom fought during the regional conflict with conflict-procured weapons. Commercial poachers have since upped the ante by themselves becoming more militarised to gain advantage over paramilitarised rangers, with rangers following suit. Also on the state side, there is a sense that the Army, given its historical border-patrol work in Kruger, is far more effective than the national police force, which took over border patrol later in the post-apartheid period (Interviews 2012). Such prior paramilitary buildup and historical recollections, punctuated by a sense that rhino poaching is a national security issue requiring a militarised response (see below), provide a fertile environment for the Army’s re-entry into Kruger and along the border. There is, after all, a sense of familiarity for many high-ranking park officials in having the Army stationed within the park, given that many were themselves undertaking joint conservation-military duties in the 1980s (Interviews 2012, 2013). We can add to this the fact that the head of Kruger’s anti-poaching operations, a retired Army general, gained valuable military experience in the Apartheid Bush Wars of the 1980s (Interview 2012; Humphreys and Smith 2014). Along with the Mozambican war, these were part of the apartheid state’s regional destabilisation campaign. In short, former military engagements and encounters—embodied in military weapons, training, and personnel as well as poverty and a sense of familiarity with Army presence inside Kruger—in many ways enable the current militarisation, poaching- and state-side. Stated more strongly, the spectre of former military activity haunts the current conservation landscape, reminding us why this history still matters.

Beyond historical legacies, there are poignant similarities between current and apartheid-era militarisation. Deployments of military actors in both cases were set in place to protect South African borders and hence the territorial integrity of

the country from cross-border threats. And, focusing in on Kruger as a borderland protected area, in both cases the threats were not merely external but were a mix of Mozambican and South African actors integrated into global networks. In the former, ANC/MK Freedom Fighters and their Mozambican supporters came head-to-head within a racially charged Cold War power play. In the latter, Mozambican and South African hunting teams are commissioned by global criminal syndicates linked to markets in Asia. Furthermore, both rounds of state-side militarisation have been justified by discourses of national security, with MK activists and contemporary rhino poachers branded insurgents who compromise the security and broader well-being of the nation-state (Interviews 2012, 2013; Anderson and Jooste 2014; Lunstrum 2014).

Like previous conservation-military encounters, the current state response to rhino poaching is met with ambivalence by rangers suggesting at best an imperfect fit. This emerges perhaps most clearly in rangers' attitudes toward soldiers deployed in Kruger. While the latter's primary role is border protection, within Kruger this translates into assisting with anti-poaching since this is the main border-transgression issue within the park. Many rangers and administrators warmly welcome the return of the military because it offers more resources in terms of people on the ground and technologies not otherwise available. But others voice concern that the Army lacks requisite bush skills, especially those needed to track wildlife and poachers, and that soldiers are even scared of admittedly dangerous wildlife, reiterating conservation officers' critiques of the Army in the 1980s (Interviews 2012, 2013). Critique is further levelled at the Army's lack of commitment to conservation and the plight of the rhino more specifically. As explained by a member of Kruger's anti-poaching task-force, the Army's mandate is problematically border protection, not conservation. You would not, he explained, hire a mechanic to build your house (Interviews 2012; also see defenceWeb 2015).

### **CONCLUSION: DISENTANGLING CONSERVATION-MILITARY ENCOUNTERS**

Returning to the Makhadzi picnic site, without fully grasping this at the time, I was moving through a site draped with layers of military activity. Some of this was on explicit display, as with Steinaecker's Horse artefacts. Yet evidence of apartheid-era military build-up had been all but erased when the former military base was transformed into a site of tourist leisure. The rangers and military personnel there that morning to attend the anti-poaching meeting were indication of yet another layer of Kruger's militarisation. These layers of history shed profound light on broader military-environment relations. To begin, we see a contradictory picture of military-conservation relations. On the one hand, there is ample evidence of various ways military activity has proven environmentally harmful within Kruger. This begins with the poaching activities of Steinaecker's Horse. The Sisal Line, moreover, invited the expansion of an invasive species. Refugee movement

through Kruger also caused environmental concern, albeit relatively minor, but this provoked the far more potentially environmentally destructive Caftan I border fence, which, if implemented, would have wiped out vegetation at the border.<sup>2</sup> In addition, commercial poaching in both the 1980s and today has been enabled by the proliferation of military weapons and made all the more attractive by war-induced poverty.

On the other hand, military weapons, skills, and activities have been deployed to assist in conservation efforts. In fact, Kruger's history underscores that anti-poaching efforts are where we see the smoothest fit between conservation and militarisation. Early on military personnel and skills were used to confront dangerous game but also evict local inhabitants and prevent their hunting. An even tighter fit emerges with the paramilitarisation of the ranger corps in the 1980s and the subsequent militarised response to rhino poaching, which includes the further paramilitarisation of the ranger force, the hiring of a former Army General to oversee anti-poaching operations, the use of military technologies and partnerships, and the Army's re-entry into Kruger. Indeed, conservation has given the Army a new lease on life in an ostensibly post-conflict era. We see an equally tight fit, although one even less studied, in how conservation has been put to use to further military endeavours: just as conservation officers in the 1980s became military offers to assist with border protection, they harrowingly employed wildlife capturing nets to seize refugees.

Notwithstanding their dovetailing, tensions between military and conservation objectives are palpable. These range from environmental concern over military activity to a sense among rangers that soldiers lack appropriate conservation skills and that the Army's mandate does not include environmental protection. Interestingly, some of the greatest tensions emerged in military projects that did not materialise as planned. Their failure can be linked directly to these tensions, as with the Caftan I Fence, but also to nature's ability to thwart military intervention, shown vividly with the Sisal Line. Furthermore, tension concerning the environmental impacts of military activity led to environmental concerns coming to shape military activity, as we saw with the proposed Caftan I Fence.

These tensions reinforce a broader point: that conservation spaces can be overdetermined. In embodying multiple and not always compatible commitments, along with related anxieties, they can be spaces where different actors collide, including different state actors. Recognising this helps us grasp how there is nothing particularly surprising about conservation spaces becoming militarised landscapes. As is the case with Kruger, this is especially so when protected areas simultaneously embody the nation's natural heritage and fall within strategic areas like borderlands, precisely the spaces where we often find protected areas given states' preferences for promoting urban-industrial development centrally (Lunstrum 2014; Westing 1988). We see this with Kruger's strategic position between opposing forces during the Anglo-Boer War and the Cold War-apartheid era and more currently with Kruger as a borderland in which a group from one side capitalises upon the high-value natural resources of the other as a conservation-

inflected arms race unfolds. Similarly, borderland protected areas, especially ones punctuated by illicit cross-border movement, are often invested with anxieties over security, transgression/insurgency, and hence sovereignty. While Peace Parks are supposed to provide a different future for these anxiety-ridden borderscapes, the GLTP has become a site overflowing with such unease. No wonder some have questioned whether the GLTP as (overdetermined) transboundary conservation area and Peace Park can weather such a storm (Interviews 2013).

Perhaps the most profound lesson from Kruger's history of military-environment engagements brings us to their legacies. These engagements have provided an arsenal of enabling factors for both poaching and anti-poaching militarisation. Indeed conservation actors can harness such historical articulations in the name of environmental protection, as we see with the current paramilitarisation of the Kruger ranger force with its roots in the 1980s ivory poaching crisis and the re-entry of the Army into the park, based on its apartheid-era experience with and reputation for border patrol. Relics of past military activity can, however, linger on to wreak havoc upon contemporary conservation efforts, whether this is in the form of AK-47s, decommissioned soldiers, or war-induced poverty that makes poaching particularly attractive. To further complicate matters, there is preliminary evidence that the state's heavy-handed militarised response—rooted in this complex history—may actually backfire by alienating the very community from which it needs support to end poaching, thereby harming conservation efforts. This offers an important rejoinder to scholarship that focuses on conflict's positive environmental impact (discussed briefly in the literature review above). Just as conflict can leave certain landscapes so dangerous and polluted that biodiversity thrives in the absence of human settlement, hostilities are as likely—arguably more likely—to cement legacies and pathways of military-environment relations that ultimately provoke ecological damage. In the contemporary case of Kruger, these legacies have translated into the militarisation of poaching as much as the state response, both ecologically damaging and deeply violent as rhinos but also suspected poachers are laid to rest. There is hence a danger of overemphasising conflict's positive environmental impact at the expense of or in ways that overshadow its propensity for ecological harm in both the short and long term.

Kruger's complex history along with the contemporary rhino poaching crisis additionally demonstrate that the current militarisation of conservation efforts, while not new, is unprecedented. We have also seen how concrete military-environment engagements are acutely contingent: the concrete forms they take are shaped by a multitude of factors ranging from geopolitical trends to individual personalities, to the wealth that creates demand for wildlife products and the poverty that helps ensure supply is met, to geographical/borderland location, and finally to the availability of weapons and military skills along with their rebirth in the face of new opportunities. Such contingencies underscore that there is nothing inevitable

about the meeting of conservation and military activity. Although when they do come together, as we have seen at various historical moments, their impacts can be profound.

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## NOTES

1. While there were also allegations that Kruger was the site of chemical and biological warfare against Frelimo (Burgess and Purkitt 2001), a senior park ranger active at the time strenuously denied this (Interview 2009).
2. This begins to complicate studies of relations between refugees and environmental damage, which focus largely on the negative environmental impacts of refugee movement.

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