

A Review of the Impact of Militarisation: The Case of Rhino Poaching in Kruger National Park, South Africa

Wendy Annecke[#] and Mmoto Masubelele

South African National Parks, Cape Research Centre, Tokai, South Africa

[#]Corresponding author. E-mail: wendy.annecke@sanparks.org

Abstract

This paper is addressed to academics, conservation agencies and governments primarily in developing countries, faced with the need to protect species from poaching by global syndicates or local groups that threaten the survival of species. The argument of this paper is that while military intervention may provide short to medium terms gains, these have to be weighed against the likely medium to long term financial and socio-economic costs of military activity on people, including the military themselves, and conservation. These costs are likely to be significant and may even threaten the sustainability of conservation areas. While the analysis is developed in relation to the military intervention to inhibit rhino poaching in the Kruger National Park, South Africa, the literature review reveals that similar challenges occur internationally and the South African case study may be applicable to a wide range of anti-poaching conservation efforts and military options throughout the developing world. A multi-pronged approach, where all components are strongly implemented, is necessary to combat poaching.

Keywords: Militarisation, poaching, protected areas, ivory trade, peri-urban matrix, poverty, persecution, international agreements, anti-poaching activities, local communities and rhino horn trade

INTRODUCTION

Rhino poaching in South Africa is currently a hot topic attracting attention globally and locally from conservation organisations, governments and civil society. Africa has two species of rhinoceros, the white rhinoceros (*Ceratotherium simum*) and the black rhinoceros (*Diceros bicornis*). Currently South Africa conserves 84% of Africa's White Rhinoceros (*Ceratotherium simum simum*) and 40% of Africa's Black Rhinoceros (*D. bicornis bicornis* and *D. bicornis minor*) (Standley and Emslie 2013). South Africa has not always had healthy rhino populations. In the 1890s, in the face of unrelenting hunting, Southern White Rhino were restricted

to a single population of about 20-50 individuals between the Black and White Umfolozi Rivers. In 1898 this area was proclaimed as the Umfolozi Game Reserve (now known as the Hluhluwe-iMfolozi Park) to protect the remaining animals. By late 2012, the white rhino population had grown to about 20,430 animals (Knight 2013) and rhino poaching remained at consistently low levels until 2008. Since then, South Africa has become a victim of its conservation success and has borne the brunt of the spike in rhino poaching in Southern Africa. Fewer than 50 rhinos were poached in 2006 but in 2008 the number rose to 83 in that year and has continued to rise each year reaching 1,215 in 2014 and a slight decline of 1,175 in 2015 (Mathieson 2016). Recent studies in the Kruger National Park suggest that, at this rate, deaths (more than three a day) may supersede births by 2018 in which case the survival of the species may be threatened (Ferreira et al. 2014, 2015). Multiple reasons for this extraordinary increase in demand have been suggested— including the emergence of unscrupulous South African professionals (safari operators and veterinarians), and the rapidly increasing disposable incomes and aspirations in the middle and far East in conjunction with global syndicates (Milliken and Shaw

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2012). Most of the poaching occurs in South Africa's iconic Kruger National Park, an area some 20,000 sq.km in extent; the largest of 21 national parks administered by a quasi-state organisation, South African National Parks (SANParks) and the case study for this paper.

The Department of Environmental Affairs (DEA) in the government of South Africa and the managers of the Kruger National Park acted swiftly in response to the surge in poaching, placing a moratorium on legal rhino horn sales, introducing norms and standards for hunting and increasing the number of rangers and patrols (DEA 2009). However, the killing continued, attracting national and international media attention. Reports of rhino deaths were accompanied by gruesome images of de-horned rhino and distressed orphaned rhino calves sparking vociferous public engagement in all forms of social media (Büscher 2016a, b). Much of this public outrage was garnered by non-governmental organisations and activists to organise campaigns, raise funds and exert considerable pressure on the South African government and conservation agencies to act forcefully against rhino poachers (DEA 2010). Powerful international lobby groups in conjunction with media houses across the globe called for a variety of sanctions and actions including declaring war on rhino poachers while individual mercenaries and ex-soldiers offered their services in to kill poachers. A valorised version of the war on poachers was made into a three-part television series, 'Battleground: Rhino Wars' (Animal Planet 2014) highlighting the international popular interest in the issue.

The DEA responded to local and international pressure by taking up the same mantle of war-mongering as the public, equating rhino poaching with threats to national security, declaring war on poachers, and noting that poaching threatens 'the reputation, eco-tourism industry, and the public image of South Africa' (DEA 2010). The war talk culminated in the appointment of (retired) Major-General Johan Jooste as Commanding Officer, Special Projects to head anti-poaching operations in the Kruger National Park in 2011 and the deployment of 265 men in two companies of the South African National Defence Force (SANDF) to the Kruger National Park (DEA 2014). The military has since continued to increase its anti-poaching measures and support in and around the park. This includes air support (helicopters, a spotter plane and drones) and highly sophisticated technologies for detecting human movement and sound (Welz 2013).

We noted the militarisation of the Kruger National Park with concern. Both authors are employed as scientists in SANParks Scientific Services division. We are based in the Table Mountain National Park and work in seven national parks in the Cape provinces. That means that we are spatially considerably removed from the frontline of poaching in the Kruger National Park. However, the national and international tirade against SANParks for being unable to stop rhino poaching was felt by many staff. There were several other reasons too for exploring an issue outside of our daily terrain. As SANParks staff, we are guided by the organisation's vision,

'a sustainable National Park System connecting society' and directed by the mission statement which is 'to develop, expand, manage and promote a system of sustainable national parks that represents biodiversity and heritage assets, through innovation and best practice for the just and equitable benefit of current and future generations (SANParks 2014). Our mandate requires that we conserve biodiversity for all the people and that we integrate people with conservation. We are concerned that military intervention will further alienate local people from conservation and the Kruger National Park. Due to the brutal historical legacy of colonialism and apartheid in South Africa, we live in a fractured and fractious society where inequality and poverty scar the landscape and have caused and exacerbated the loss of land and livelihoods to protected areas including the Kruger National Park. We question whether the new military, renamed the South African National Defence Force (SANDF) has been able to transform within the new democratic order or whether the old destructive ethos leeches into the new SANDF (Kynoch 1996; Le Roux 2005) and may include participating in illegal wildlife crimes. Recognising that positive relations between conservation areas and people are key to the sustainability of the nation's biodiversity, we are concerned with the response of local people to the military presence—bringing the military into Kruger National Park sixteen years after democracy is fraught with memories of a bitter era in South Africa's history. A significant component of the paper deals with the social impacts that are likely to result from military intervention.

We present examples in and close to protected areas within the region, continent and the other parts of the world to illustrate the international character of military intervention in conservation and question whether the SANDF will be able to break the military mould and act in the interests of SANParks joint biodiversity-protection and people-oriented mandate.

Lastly as South Africans we believe that we should make our concerns known. International academics have taken up the cudgels and developed insightful arguments into green militarisation and securitisation (Kelly and Ybarra 2016; Lunstrum 2014; Massé and Lunstrum 2016; Duffy 2016, 2014; Duffy et al. 2015). The role of the social media in the Kruger National Park has been highlighted by Büscher (2016b). However, of those directly responsible for rhino protection, few in either the DEA or SANParks have questioned the role of the military. Notable exceptions are Ferreira et al. (2014); Ferreira et al. (2015); and Knight (2013) who deal primarily with biological, management and policy issues rather than socio-political issues. Ours is not a popular position in South Africa, however it is gleaned from our experiences in apartheid South Africa which highlighted the shortcomings of military intervention in socio-political conflicts and we wanted to explore the likelihood of the military option succeeding in the multi-dimensional case of rhino poaching. As South African citizens, we experience daily the effect of ratcheting up the tensions between the middle classes living in fortified houses while the 'have nots' devise increasingly sophisticated or violent ways of transgressing the fortresses. It would

appear that poachers are engaging in a similar ratcheting up of the tensions and an 'arms race' against the military in the Kruger National Park and other rhino sanctuaries. The more sophisticated the military intervention, the more sophisticated the response from the poachers (Massé and Lunstrum 2016) and we argue that the concentration of deadly weaponry and the compulsion to kill cannot be good for social ecological systems.

Colleagues challenged us to provide peer-reviewed evidence that the military option has adverse consequences for biodiversity and people. This paper provides evidence from international literature that despite some exceptions, the military generally do have a negative impact on biodiversity conservation, the social impact of the military in conservation areas is generally detrimental to local populations and to some of the military personnel and is unsustainably expensive.

METHODOLOGY

We found the peer-reviewed literature using Google Scholar and ISI Web of Science to do a broad search using the key words *green militarisation, green violence, militarisation and conservation, impact of military on conservation, war on rhino and impact of military on personnel*. The latter is a vast literature and beyond the scope of our paper, so we used information from the apartheid armies (national and liberation) and field evidence to highlight the impact on different groups of people of fighting the 'rhino wars'. For contemporary social media and comment we used Google key words *war on rhino*, local newspapers and SANParks' official facebook page and Büscher (2016 a, b). Google produced useful references for *arsenal of weapons in Kruger National Park to fight poaching, and what are the risks of entrenching the military?*

The results of the search on the impact of military activity on conservation and people resolved quite quickly into three categories of impacts: positive impacts of the military with regard to protecting some species and getting rid of others; generally positive impacts of the unintended consequences of bases or no-go zones that provide incidental protection for some species; and substantial evidence of the negative impacts of prolonged military intervention on conservation and people. In the second part of the paper, we compare these findings to conditions in the Kruger National Park in order to draw attention to the potential outcomes of military intervention in rhino poaching. We highlight the blurring of roles of the military and conservation in SANParks that have led to the alienation of the broader community from conservation.

ARGUMENT

The South African Experience is similar to the International Experience

Militarisation can be defined as the process by which a society organises itself for military conflict and violence. The extent or degree of violence permitted may be debated but the

violence itself, being state sanctioned is deemed legitimate (Giddens 1985) albeit neither politically nor ecologically neutral. Violence is exercised in the interests of particular groups: one of the objectives of this paper is to bring to surface some of the impacts of violence applied in the name of anti-poaching. Lunstrum (2014) describes the use of military and paramilitary (military-like) actors, techniques, technologies, and partnerships in the pursuit of conservation, as *green militarisation* with securitisation and green militarisation developing into fields of study in their own right (Duffy 2016; Lunstrum 2014).

While we identified positive contributions of the military to conservation as a category in the literature, there were not many examples of this (Dudley et al. 2002; Hanson et al. 2009; Lawrence et al. 2015). In Australia, the military working in conjunction with the police and the justice system were able to ensure security in highly complex situations and reduce some of the wildlife trafficking that has been so detrimental to biodiversity (Alacs and Georges 2008). In India, retired generals planted more than 10 million trees between 1985 and 1995 at Kutch in Gujarat, where they also monitor pollution and help protect wildlife in the Greater Himalayas (D'Souza 1995). In Rwanda, government commitment is seen in the security provided to researchers and tourists on a daily basis in the form of military escorts to the gorillas (Glew and Hudson 2007). While this protection is for tourists, it has been argued that it is revenue from tourism to communities that keeps the gorillas from becoming bushmeat (Warchol 2004). Dublin and Wilson (1998) point out that improved intelligence (along with putting most of Africa's rhinos behind fences and in protected areas), had been credited with slowing the pace of rhino deaths in Africa.

On occasion, the unintended consequences of military bases have been positive for conservation since areas that are made inaccessible to the public inadvertently protect the enclosed fauna and flora. An encouraging example has been the linking of US military lands with the US Fish and Wildlife Service that has enabled large landscape conservation and an ecosystem approach in the face of climate change (NatureServe 2008; Lawrence et al. 2015). In the Czech Republic, Cizek et al. (2013) showed that militarised training areas had similar plant species richness to nature reserves' networks and sometimes had higher butterfly richness and higher representation of endangered species than areas outside military bases: positive for both conservation and the military's public relations. An essay by Thomas (2010) on Korea's Demilitarised Zone provides an articulate report on the unintended but significant wildlife refuge that the stalemate on that peninsula created after 1953. However, in 2011, Lee Jenni argued that conflict over environmental management decisions on military bases is increasing. In practice, species conservation and troop training are in contradiction and the military are quite clear that species protection will not be allowed to interfere with training needs.

Overall, the literature reflects a considerably larger number of negative impacts of the military in socio-ecological systems than positive. Conservationists' concerns may be divided

into two broad categories: the first relate to the physical outcomes of military activities on biodiversity (Beare et al. 2010; Dudley et al. 2002; Hanson et al. 2009; Lawrence et al. 2015; Zentelis and Lindenmayer 2014), the second highlight social issues including human rights abuses as a result of the difference in ethos and ethics between civilian populations, conservation and the national armed forces (Oksanen 2005; Sarkar and Montoya 2011). We look first at the physical and material consequences.

The military arrive with a solid footprint often contrary to conservation principles and the ethos of treading lightly on the earth. They proceed to establish a base which may involve permanent buildings and runways, erecting tents over extensive areas, attaching space for accommodation (Marler and Moore 2011) or forced removal (Ybarra 2012). In Guatemala, the military constructed roads encouraged loggers, ranchers, construction workers and land-seekers to extend agricultural lands into the Maya forests thus depleting the biodiversity (Ybarra 2012). Ybarra argues that the military used counterinsurgency tactics to create a no-man's land through burning people, villages, crops and livestock (Ybarra 2012). She argues 'that conservationists and the military are complicit in reproducing social inequalities, often through violent exclusions' (Ybarra 2012) with the consequences of fear and resentment. Having established their base, military personnel require resources (water, energy, food and waste disposal) and develop lines of supply such as those with the local fishing communities in Nepal (Jana 2007). New settlements and industries emerge to service the needs of the military and the development of bars, drug dens, houses of prostitution and speciality shops threaten conservation areas (Darst et al. 2013). Anti-military movements may also appear in reaction to military presence and entrench violent relations in ways that are detrimental to local social life as well as wildlife and conservation areas (Lawrence 2013; Otsuki 2013; Carlson et al. 2015). Plumtre et al. (2001) note how more than a decade of civil war and political instability has impacted the Virungas National Park in Rwanda, at times threatening the lives of field staff and wildlife including the gorillas, and preventing all field operations. The IUCN (2004) highlights the ripple effect of the prolonged conflict in the Great Lakes region that threatens conservation sites which lie on the path of, or are used as bases and food baskets by armies and counter-armies.

Ongoing conflicts have meant that, particularly in Africa, there is a proliferation of weapons among civilian populations which are used against people and animals. According to the IUCN (2004) over thirty years of conflict has had a devastating impact on rhino populations in Angola, CAR, Chad, the Democratic Republic of Congo, Mozambique, Namibia, Rwanda, Somalia, Sudan, and Uganda. Refugees from such conflicts may turn to poaching (bushmeat) to feed themselves or to earn a cash income (Plumtree et al. 2001; Jambiya et al. 2007). The commercialisation of bushmeat is one of the most significant and immediate threat to wildlife populations in Africa today (Warchol 2004).

A further problematic consequence of the military using conservation areas as a base is that the military or counter army personnel enter the poaching fray with sophisticated weapons and insider knowledge (Carlson et al. 2015). UN Secretary General, Ban Ki Moon (UN 2013) highlighted the rise in poaching in the conflict zones of Chad, Cameroon, Central African Republic and Gabon, when Garamba National Park was used as a military base to the detriment of the wildlife and local populations (Duffy and St John 2013). Armies and counter-armies have used ivory and rhino horn to finance their operations in Uganda in the 1970s and 1980s (Norgrove and Hulme 2006; Lawrence 2013), Angola and Mozambique in the 1980s (Ellis 1994; Reeve and Ellis 1995; Duffy 1999; Cochrane 2008), and the Great Lakes region since 1996 (IUCN 2004), while there has also been poaching by rebel groups in the Zakouma National Park in Chad to fund cross border wars (Duffy and St John 2013). National parks have been used in the past to train militia and rebel movements including the use of Kruger National Park by the South African Defence Force to train Renamo rebels in the 1980s (Cock and Fig 2000; Ellis 1994).

Apart from direct material impact of military or contra military on conservation, the presence of the military may obstruct the ability to manage the conservation sites. Salafsky et al. (2002) include off-road vehicles, military activity and war in their list of direct threats to biodiversity tourism, noting that tourists are put off by the risks associated with a combination of conflict zones and poaching (Salafsky et al. 2002). Since tourism revenue is key to sustaining protected areas, this constitutes a significant challenge for communities aiming to capture tourist value of wildlife in CAR, Sudan, DRC and the Rwanda-Uganda-DRC border areas (Lombard 2012). Whereas the military may have arrived to protect one resources or species (gorillas, tigers, elephant, rhino), by building roads, driving recklessly and/or using off-road vehicles illegally through conservation areas, they are often a major threat to another, often smaller, species such as frogs or tortoises (Darst et al. 2013). Indeed, for conservation agencies that purport to manage ecosystems rather than single species, the focus on a single species may present substantial management challenges (NatureServe 2008).

From the impacts of the military on biodiversity conservation we shift our focus to social impacts including human rights violations by the military in conservation areas. The military has been known to threaten civilian populations with violence that has left local inhabitants scarred and without their civil rights. Similar to Ybarra's findings (2012), Knudsen (1997) argues that the lack of trust between Wakhi villagers and the government excludes the possibility of cooperative management of the Khunjerab National Park. The villagers are intimidated by the military's armed presence and de facto control of the park. Since the military are not trained in conservation principles this creates conflict between the villagers, park management and the military. Cross-border invasions, such as those launched by Zimbabwe in the mid-1980s in an attempt to stem the cross-border activities

of Zambian-based poachers in the Zambezi Valley, have disastrous consequences for people and wildlife (Dublin and Wilson 1998).

As a result of the way in which conservation has been implemented in Africa, protected areas frequently symbolise oppressive colonial practices and may play a role in perpetuating conflicts (Carruthers 1993, 2010; Barquet et al. 2010). The role of armed guards and the 'shoot on sight' policy has been severely criticised as reminiscent of colonial practices of exclusion and 'Othering' (Wilshusen et al. 2002; Neumann 2004; Baines and Vale 2008). Furthermore, protected areas have been accused of facilitating the continuation of military conflicts because they help finance military operations by providing resources and shelter, as in Cambodia, where timber harvesting financed political and military rivalries at great expense to local freedoms (Barquet et al. 2010). Jana (2007) provides several examples of human rights violations by the military and the legacy such violations have left in Nepal. She and Knudsen (1999) highlight the manner in which the military exacerbates gender inequality in and around protected areas in Nepal and Pakistan respectively.

In the Liwonde National Park in Malawi, a South African private military company was used to train the park rangers in their duties and later park staff were implicated in over 300 deaths, 325 disappearances, 250 rapes and numerous instances of torture between 1998 and 2000 (Neumann 2004). By implication, South Africa exported its propensity for violence to Malawi, usually thought of as a gentle country (Silver and Wilson 2007). Human rights violations were vividly experienced in the rhino wars in the Zambezi Valley in the 1990s when local communities were caught in the crossfire between organised poachers and parks agencies (Duffy 2010; Duffy and St John 2013) and in Nepal, Pakistan, Ecuador and Guatemala people were violently evicted from their homes to make way for protected areas (Knudsen 1997; Sawyer 1997; Jana 2007; Ybarra 2012). Men in uniform, both police and military, (often confused by people under threat), have been involved in clearing areas, moving people and burning their houses, crops and livestock to make way for conservation (Knudsen 1997; Sawyer 1997; Jana 2007; Ybarra 2012). Those whose lives were disrupted have remained hostile towards and threatened by the military for many generations.

The ultimate human rights violation may be to 'shoot on sight', without fair trial and in the absence of any declaration of any sovereign war. Neumann (2004) spearheads a penetrating critique of the normalisation of violence and killing in Africa in the name of protecting wildlife within the fortress model of conservation and 'the war for biodiversity in Africa' which frequently puts the interests of biodiversity above those of human life (Neumann 2004).

In reviewing the history and legacy of military presence in international conservation areas, from Guatemala to Guam, from Tianen to Pakistan and in many regions in Africa, the long term outlook is predominantly negative for the environment and local populations.

South Africa's experience parallels that found in the literature on the military in conservation

In the second part of the paper we compare the international experience of the military in conservation to conditions in the Kruger National Park. We categorised our findings in ways similar to those above: in terms of positive, unintended and negative impacts. There are few documented positive experiences of the military in conservation in South Africa other than the role the government has played in the protection of the rhino in recent years (DEA 2010, 2014, 2015; SANParks and Denel 2012). The closest we could come to the unintended (positive) consequences of military bases as described above, was that the national arms manufacturer, Denel, has a testing range on the borders of Agulhas National Park in the Western Cape. The management of Denel have put a plan in place to protect several endemic and threatened species of fynbos (Giel de Kock pers.comm.2014). However, the social impact of removing the fisher-people from the area in the 1960s was severe and they still resent losing their land and access to the sea (de Kock 2011).

South Africa has suffered most of the negative outcomes ascribed to the presence of the military in conservation in terms of biodiversity, social justice and human rights violations. SANParks maintains an uneasy relationship with a number of its neighbours who were forced off their land and are still resentful of the privileging of biodiversity conservation above their livelihoods (Ramutsindela and Shabangu 2013). The use of force by men in uniform irrespective of whether they are security personnel, police, rangers or the military has blurred the boundaries between the military and conservation. During the apartheid era, none of these units was an ally to the majority of the people. The security police were notorious, SADF troops in the townships pitted the might of the military against ordinary black people (Le Roux 2005), while beyond South Africa's borders, the SADF was responsible for deaths of liberation fighters and civilians in Botswana, Mozambique and Lesotho (Reeve and Ellis 1995; Van Vuuren 2006; Montesh 2013). In the apartheid era, 3,000 Makuleke villagers were forced to burn their own homes in the Pafuri area of the Kruger National Park (Cock and Fig 2000); the ̧Khomani San (bushmen) were removed from the Kalahari Gemsbok Park (Holden 2007); and people in the Madimbo Corridor were moved and still feel constantly threatened by military presence (Whande 2007). None of these issues have been entirely resolved despite South Africa's land claim and restitution process.

As in the rest of Africa, there has been a decimation of wildlife in cross-border insurgencies between South Africa and its neighbours (Ellis 1994; Cock and Mckenzie 1998; Whande 2007; Ellis 2012; Fenio 2015). During and after the liberation struggle, South Africa has been awash with weapons (Cock 1996), the SADF was responsible for the decimation of wildlife in Namibia and Angola (Rademeyer 2012), and illegal ivory and rhino horn have been used by the military to finance the war effort (Ellis 2012; Montesh 2013; Humpries and Smith

2014). Other transgressions of conservation ethics, similar to those found in the international literature, include protected areas in South Africa that have been used as military training bases. The best documented example is that of Renamo who were trained in the Kruger National Park (Ellis 2012).

The dawning of democracy in 1994 signalled the need for new approaches to almost every sphere of life in South Africa including conservation. On paper and in some sections of DEA and SANParks, both the ethos of conservation and the philosophical approach to the ways in which protected areas should be governed, shared and made accessible to the people shifted towards a human rights approach. The notion of fortress conservation was replaced by a concept captured in the vision statement 'connecting to society'. However, residual elements of the previous regime and ideology lurk in almost all corners of the organisation, most clearly visible in the retention of the hierarchical structures and uniforms. Less obvious but equally pervasive are old attitudes, forms of language and a reluctance to trust and share with neighbouring communities. The sustained collaboration between the park and the military have shaped generations' access to land and natural resources and are the basis for the sustained ill-feeling towards many officials and negative perceptions of conservation which persist along the borders of the Park today (T Moholoholo, Hoedspruit pers.comm. 2015).

As with the conservation sector, the military underwent significant changes of demographics and orientation after 1994, but the essential character remains intact. Military discourse is still associated with precision, force, discipline, killing the enemy, power and hierarchical structures (Brotz and Wilson 1946). 'Real soldiers' are still expected to be full blooded hunters who enjoy the adrenaline rush of the chase and the kill as valourised in 'Battleground Rhino Wars' (Animal Planet 2014). However, post 1994, the functions of the military and conservation were largely separate until their trajectories were reconnected by rhino poaching: an ideal arena in which to exercise military skills of bush war grown rusty with a lack of practice. In 2012, Major General Jooste was appointed to head the joint operations of the police, the park rangers and the military (Scott 2014). Disappointingly, members of the SANDF (as well as SAPS and SANParks) have not been able to avoid the transgressions of the past, and have been arrested for being involved in rhino poaching (SANParks Communications Division media release.2016).

There are impacts on the security personnel themselves too (Marler 2014). Older rangers who were trained in conservation have had to be retrained in anti-poaching tactics. New recruits to conservation are immediately put through six weeks of para-military training rather than conservation (Wildlife College pers.comm. 2015). Rangers report that they currently spend up to 90% of their time on rhino poaching activities and only 10% on biodiversity conservation. Many are unhappy with this and there is considerable impact on conservation management when rangers cannot perform their routine monitoring of park systems and vulnerable species (Anonymous pers. comm 2015).

"I have become a mercenary". This was the deprecatory description heard several times in and around the Kruger National Park in February 2015. It is illegal to be a mercenary in South Africa (Government Gazette 2007) so the self-selected label is not a happy one albeit that the violence is state sanctioned. For those who find themselves facing an armed poacher in the field and having to make a split second decision about taking a life, there is, officially, no 'shoot to kill' or 'shoot on sight' policy in South Africa. There has never been a death penalty for poaching and the death penalty itself was abolished in South Africa in 1995 (South African Constitutional Court 1995). Officially, the procedure is to arrest illegal trespassers, yet in a 'friendly fire' incident in Kruger National Park it would appear that one of the allied operatives opened fire on a member of the SANParks staff (Pillay 2012). The obvious question is how often this has or will occur in such tense and dangerous conditions.

All security personnel are called out regularly on anti-poaching missions and live under conditions of extreme stress (Massé and Lunstrum, 2016). The relentless pressure of being part of a war machine puts strain on the rangers and on their families who did not sign up for the trauma and tension of being on stand-by or in combat. The senior rangers predict that is only a matter of time before partners, wives and children are no longer willing to be constantly living in fear of rangers' lives (Anonymous pers. comm 2015; Serino 2015). Friends and neighbours do not necessarily want to be drawn into supporting efforts that may run contrary to their own convictions.

While it could be argued that tracking down a human enemy constitutes a component of military or even police training, taking a life affects people differently. There will be those for whom killing a fellow human being will result in an ongoing disorder, such as the security agent who, after killing an armed poacher who had threatened his life, told his mentor, "I can't sleep. When I try, this man comes to me in my dreams and says 'take me home, take me home... my ancestors are waiting'. But I can't take him home and I can't sleep" (Stakeholder Hearing 2015). On the other hand, there are men such as Bruce Leslie of SANParks who said, 'but I suppose the brutality of it actually is being lost on me at the moment. I think to survive the emotional side of things, one gets hardened. It is like seeing dead poachers now. I've seen enough this year not to worry about them anymore.' (Rademeyer 2012). In the long-term, South Africa cannot afford to have more people damaged by violence. Our ruptured society needs to find non-violent solutions to challenges, including rhino poaching that promote health, social cohesion and reconciliation.

Rhino poaching exacerbates the thin relations that exist between the Park and the neighbouring communities particularly since the majority of poachers (60%) come from or are sheltered by these communities (Milliken and Shaw 2012). Poachers' families are unlikely to admit the culpability of their kin. They are more likely to be alienated by the loss of a breadwinner and the descent into (further) poverty. We anticipate that for every poacher arrested or killed, at least four, but probably six or eight people, will be resentful of

those perceived to be responsible for the arrest or death. The literature shows that this disaffection may be extended to the entire community (Neumann 2004; Hutton et al 2005; Duffy and St John 2013; Lunstrum 2014). When poachers are killed it is not always clear how their bodies are treated, whether they are given to communities for proper burial or not, but it is well known and understood that such rites are important and if not undertaken may lead to further alienation of families and communities.

The cost of operations and the risk of entrenching the military

Military protection for the rhino is expensive (Tatham and Taylor 1989; Dublin and Wilson 1998). Funds are drawn from national coffers as well as significant grants received from the Swedish and Norwegian governments and individuals such as Howard G Buffet who donated R255 million in 2014 and R37 million in 2015 for a helicopter with night flying capabilities (SANParks 2015). There have also been donations of hardware including drones (\$15000 each) and substantial off-road vehicles (Venter 2014). Despite this massive intervention that constitutes South Africa's primary intervention, poaching is continuing. This would indicate that more of the same, i.e. increased levels of military intervention will not be sufficient to curb poaching. If intervention is prolonged and involves international interests it runs the risk of entrenching its own violence, becoming a permanent feature and/or becoming an arena for other conflicts (Ybarra 2012). It is possible to see vested interests developing in maintaining military action and technology testing in the Park where conditions are ideal for training and demonstrations. Although NGOs have reported that donors prefer to fund "boots on the ground and technology" rather than more peaceful strategies (Welz 2013), the financial costs of the joint operations are likely to be unsustainable for South Africa when donor funding dries up.

It can be observed that the military is making an impact on the base town of Hoedspruit where enterprises are developing in response to military needs (Jana 2007), increasing the footprint and pressure in the areas bordering the Kruger National Park. The injection of cash into the local economy by the forces stationed at the base town, the development of businesses to service them, liaisons and children, the use of Kruger National Park as a training ground, and the temptation of poaching itself, will make it difficult to withdraw security personnel. If the security forces are caught up in an arms race with poachers, or if the crime syndicates take hold in the area, the region may be destabilised and the military may be called on to stay.

The literature shows that as militarisation and alienation are entrenched inside and outside the Park, it may become more difficult to work with people towards solutions (Duffy and St John 2013) and that short term gains by the military which alienate the communities involved are not recommended (Tatham and Taylor 1989; Duffy and St John 2013). Even success poses a risk to civilian life; if the number of rhinos

poached stabilises, the argument may be made to maintain the familiar military presence, thereby further entrenching the military option as a normal way of life.

Complementary strategies and alternatives to militarisation have been developed but are not yet receiving anything like the attention and resources that the security forces are. The Rhino Issue Management (RIM) Report (DEA 2013) was the result of an eight-month process driven by the DEA, which engaged a wide variety of stakeholders in the development of 'a common understanding of key issues concerning the protection and sustainable conservation of the South African Rhino population'. The RIM report made extensive recommendations on funding, safety and security, conservation, commerce and trade. Nationally and internationally, criminal justice systems, tax departments, intelligence networks, customs officials and other law enforcement agencies need to engage to overcome wildlife trafficking including the illegal rhino horn trade. South Africa and its neighbouring countries will have to continue to develop and maintain close cooperation in order to coordinate their anti-poaching efforts. SANParks and DEA have both developed their own integrated approaches to conserving rhinos which consist of similar multi-pronged components: compulsory interventions and protection; increasing rhino numbers; long term sustainability interventions (creating sustainable demand for rhino products), game changing interventions such as disrupting organised crime and the creation of economic choices for communities bordering the Park (DEA 2013). The RIM report highlights in-country strategic thinking beyond the military option that is currently the only real response. Bonacic et al. (2016) suggests an international fund to support rhino conservation in the long term. The impetus for this paper came from a concern with ratcheting up the violence in the discourse of stakeholders and the intervention of the military in the Kruger National Park.

CONCLUSION

We have argued that the negative implications and the social and economic costs of the military anti-poaching operations in the Kruger National Park are considerable and will be unsustainable in the longer term. At a country level, all dimensions of a multi-pronged rhino management strategy will have to be given equal attention, in particular disaffected communities must have the opportunity to become equal partners in conservation as a national public good and asset.

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