

AN ABSTRACT OF THE DISSERTATION OF

Andréa L. Kuchy for the degree of Doctor of Philosophy in Forest Ecosystems and Society presented on February 24, 2021.

Title: Crimes Against Rhinoceros: Exploring Attitudes and Perceptions of Stakeholders in South Africa.

Abstract approved:

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Mark D. Needham

African rhinoceros, once abundant across Africa, face threats to their long-term survival primarily due to the syndicated poaching of their horns for Traditional Asian Medicine and as status symbols in Asia. Most studies focusing on the human dimensions of rhinoceros poaching have been limited to examining a few aspects of this issue (e.g., reasons for consuming rhinoceros horn, opinions about legalizing trade in horns), from the perspective of just one or two stakeholder groups (e.g., community members, private game reserves that own rhinoceros), and in geographically constrained areas within South Africa or in other countries.

This dissertation examined perceptions of multiple stakeholder groups regarding several different issues related to the poaching of rhinoceros across various provinces within South Africa. Three standalone journal articles contained in this dissertation used qualitative data to evaluate stakeholder: (a) attitudes, norms, and perceived motivations associated with the poaching of rhinoceros in South Africa; (b) perceptions of trust, corruption, and punishment related to this topic; and (c)

perceptions of risks associated with this issue. Fifty-four in-person, semi-structured interviews were conducted across seven stakeholder groups (private game reserve personnel, government personnel, personnel from non-governmental organizations [NGOs], wildlife veterinarians, community members, private field rangers, tour operators) in six provinces across South Africa (Gauteng, Limpopo, Mpumalanga, KwaZulu Natal, Eastern Cape, Western Cape).

Results from the first article showed that respondent attitudes emphasized poor (minimal and inaccurate) communication, divisions among stakeholders, lack of political will, and limited resources (e.g., financial support) as serious obstacles to protecting rhinoceros from poaching. Stakeholders also suggested that: (a) conservation strategies in place for rhinoceros can serve as umbrella protection for other species, (b) tourism and employment are being impacted by the poaching, and (c) although the poaching of rhinoceros was not an accepted norm within most communities, some poachers are viewed as heroes for bringing income into impoverished communities. Respondents held various perceptions on the primary drivers and motivations for poaching (e.g., social status and ego of end-users, poverty and greed of poachers, crimes of opportunity).

Results of the second article showed that respondents perceived low trust and high corruption associated with security forces (e.g., police, public rangers), upper ranks of the federal government, some veterinarians, and some NGOs, but greater trust and less corruption among private anti-poaching rangers. Punishments for convicted poachers were considered sufficient by most stakeholders, but some felt that even harsher penalties were needed.

Results from the third article showed that respondents perceived several risks to themselves as a result of carrying out their professional activities associated with the poaching issue (e.g., personal safety risks from poachers and syndicates, risk of arrest, social and psychological risks from trauma-inducing situations in the field, risks to family members). Respondents also perceived risks to the safety of the broader public (e.g., tourists, community members). Implications of these findings for both: (a) future research to fill in key gaps in knowledge, and (b) agencies and other stakeholders managing this issue are discussed throughout this dissertation.

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Crimes Against Rhinoceros: Exploring Attitudes and Perceptions of Stakeholders in  
South Africa

by  
Andréa L. Kuchy

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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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Andréa L. Kuchy, Author

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## CHAPTER ONE - INTRODUCTION

Wildlife trafficking is one of the four largest transnational organized criminal activities in the world, alongside trafficking in drugs, arms / weapons, and humans (Scanlon, 2014). The African rhinoceros is one wildlife species that faces the threat of extinction in the wild, largely due to syndicated poaching for the lucrative black-market profits from their horns. Contemporary uses of rhinoceros include using its horns in Traditional Asian Medicine and as a display of status among the upper middle class, especially in Asian nations such as China and Vietnam (Dang Vu & Nelson, 2020; Save The Rhino, 2020). South Africa, and in particular, Kruger National Park (KNP), is the stronghold of this species, but poaching in this country increased from 13 rhinoceros poached in 2007 to a high of 1,215 poached in 2014 (Figure 1). Since that time, poaching has declined to 594 rhinoceros reportedly poached in 2019 (DEA, 2020). In 2020, the level of poaching fell to 394 rhinoceros poached in South Africa, largely due to the secession of access and travel both domestically and internationally, as lockdowns and travel restrictions were implemented during the COVID-19 pandemic (Meldrum, 2020). Many have speculated that poaching will resurge as restrictions are lifted (e.g., Meldrum, 2020).

Most of this recent reduction in poaching has occurred in KNP, the epicenter of rhinoceros poaching, where enhanced security initiatives have been lauded for some of the decline (e.g., DEA, 2018). Some have also argued that the recent numbers fail to account for many rhinoceros that have been poached, but remain undetected, in certain terrain and large protected areas (Bale, 2018). The population in KNP also dropped from more than 10,000 rhinoceroses in 2011 to 3,817 animals in

2019 (Africa Geographic, 2021). Even as the number of reported rhinoceros poached has declined in KNP, poaching has increased in several other South African provinces (Somerville, 2018). Many conservancies, parks, and reserves in these other regions are 'soft targets' because they lack the capacity to implement strong security protections against armed poaching groups. Mortality rates of rhinoceroses continue to exceed birth rates, putting the species at risk of extinction (e.g., Ferreira, le Roex, & Greaver, 2019).

There has been substantial research on the biological and ecological impacts associated with the poaching of rhinoceros (e.g., Ferreira, Greaver, Nhleko, & Simms, 2018). There have also been some studies on social science and human dimensions aspects such as views toward the consumption of rhinoceros horn (e.g., Truong, Dang, & Hall, 2016), support for strategies associated with demand reduction and regulation compliance (e.g., Sato & Hough, 2016), opinions regarding trade legalization (e.g., Rubino & Pienaar, 2018; Wright, Cundill, & Biggs, 2016), community perceptions of this poaching (Mamba, Randhir, & Fuller, 2019), and why individuals favor products from rhinoceros horns (e.g., Vigne & Martin, 2008). However, it is unclear what factors, or combination of factors, motivate individuals to poach rhinoceros, and few studies have examined stakeholder perceptions about what they believe are the drivers of poaching and motivations of poachers (e.g., Chapman & White, 2019; Wright et al., 2018). Motivations may be context-specific and vary widely depending on geographic region, ecological conditions, social context (e.g., culture, religion), politics, or economy. Understanding stakeholder perspectives regarding the motivations of poachers and factors driving the trade in rhinoceros horn

is vital for informing effective anti-poaching initiatives and policies that may deter poaching (e.g., Kuhl et al., 2009).

Additional social psychological concepts, such as stakeholder attitudes and norms about the poaching of rhinoceros, are also important for informing policies and regulations (Vaske & Manfredi, 2012). In addition, these cognitions can be useful for informing the creation and communication of conservation messages and other educational efforts designed to increase awareness (Mengak, Dayer, & Stern, 2019). An attitude is defined as an individual's favorable or unfavorable judgment of a person, object, issue, or action (e.g., Eagly & Chaiken, 1993). Norms include behaviors that an individual believes other people (e.g., village elder, parent, religious leader) want them to perform or think should be performed (e.g., Lapinski & Rimal, 2005; Vaske & Whittaker, 2004), or standards of appropriate behavior that develop from observing how other people behave (Ajzen, 2000).

The poaching and illegal trade of species such as rhinoceros are usually linked to corruption, which is defined as the abuse of power by a public official or private individual for personal gain or to benefit others (Transparency International, 2009). Organized criminal networks trafficking rhinoceros horns use corruption as a means of earning profits and obtaining market control while providing opportunities to evade detection and prosecution (Blackburn, Neandis, & Rana, 2017). Public and private sector corruption threatens wildlife conservation and provides a landscape for organized criminal syndicates to flourish. Corruption can be associated with a decrease in punishment, which is defined as a consequence or penalty imposed for an actual or perceived offense such as poaching (Boyd, Gintis, Bowles, & Richerson,

2003). Corrupt behavior can also subvert police and judicial systems, and impede apprehension of poaching offenders, thereby influencing perceptions of trust. Trust is defined as the willingness to rely on those with decision-making responsibility to take actions representing public interests (Earle & Cvetkovich, 1995). Understanding stakeholder perceptions of corruption, punishment, and trust associated with the poaching of rhinoceros may inform management and policy decisions with high levels of support and compliance (Duncker & Goncalves, 2017).

Trust is an important element of perceived risk (Needham & Vaske, 2008), which is defined as an individual's subjective judgment of the probability that they believe they are personally vulnerable to harm from a hazard (e.g., poaching), coupled with the severity of consequences (e.g., Requier, Fournier, & Darrouzet, 2020; Slovic, 2010). Wildlife crimes on the scale of organized syndicated poaching have resulted in a militarized response in many areas, such as KNP, to protect rhinoceros and reduce risks. Security forces and rangers undergo paramilitary (military-like) training to protect many areas where rhinoceros are under threat from armed poachers who use advanced technology and military-grade equipment (e.g., helicopters, infrared scopes, heavily armored vehicles; Funk, 2016). In KNP, up to 200 suspected rhinoceros poachers were killed by rangers between 2011 and 2016 (Shaw & Rademeyer, 2016). Globally, more than 600 rangers were killed by wildlife poachers in the past decade (IRF, 2019). Wildlife veterinarians, activists, owners of rhinoceros (e.g., private game reserve owners), protected area staff, farmers, community members, and tourists are also at risk, as they have been impacted by the syndicated poaching of rhinoceros. These stakeholders on the front lines operate in

environments that pose risks at the individual, community, and societal levels where outcomes such as violence and corruption can occur. In addition to the risk of personal danger (e.g., being killed by a poacher), these stakeholders face social and psychological risks resulting from poacher fatalities in combat, repeated exposure to graphic crime scenes of poached rhinoceros, compassion fatigue, burnout, and other risks related to this issue (e.g., O’Grady, 2020). Understanding how stakeholders perceive the risks from engaging in the protection and conservation of rhinoceros is important for developing effective management regulations, as well as supporting programs that provide active preventative measures and intervention for job-related stress, trauma, and burnout (e.g., Norton, Johnson & Woods, 2019).

Given that South Africa continues to experience the highest poaching pressure on rhinoceros in Africa, information is needed: (a) on the cognitions (e.g., attitudes, norms, motivations, trust, perceptions of corruption and risk) of various stakeholder groups toward this issue, and (b) across a wide geographical area within this country because experiences, cognitions, and priorities may differ among groups and locations. Inclusion of diverse stakeholder cognitions based on their experiences and needs may result in management and policy tactics with higher levels of implementation, support, and compliance (e.g., Duncker & Goncalves, 2017). To date, however, few studies of the rhinoceros poaching issue have examined the cognitions of multiple stakeholder groups, in public and private protected areas, and across geographic regions. Research on this issue has also typically engaged with these cognitions separately (e.g., Cochran, Lynch, Toman, & Shields, 2018; van Uhm & Wong, 2019). Most studies on this issue have just examined a single cognition

(e.g., attitudes) held by one group (e.g., community members) in one area (e.g., adjacent to KNP). These cognitions, however, are more complex and not independent, as they can influence each other (Vaske & Manfredi, 2012). In addition, cognitions can differ among multiple stakeholder groups and geographical locations (Decker, Riley, & Siemer, 2012). As a result, there is a need for more robust social science and human dimensions research on how these concepts collectively relate to the poaching of rhinoceros across multiple groups and areas (Harris & Shiraishi, 2018).

The overall aim of this dissertation was to use data from a qualitative study to advance the fields of human dimensions of wildlife in general (e.g., Decker et al., 2012) and conservation criminology in particular (e.g., Gore, 2017) by providing an exploratory analysis of stakeholder attitudes, norms, motivations, trust, and perceptions of corruption and risk associated with the poaching of rhinoceros in South Africa. These data were obtained from 54 semi-structured interviews conducted with seven stakeholder groups (private game reserve personnel, government personnel, personnel from non-governmental organizations, wildlife veterinarians, community members, private field rangers, tour operators) across six provinces in South Africa. This methodological approach relied on the subjective opinions of a purposive sample of respondents. For this reason, results should be viewed as opinions of respondents and are not necessarily generalizable to other locations, stakeholders, or wildlife issues. Nevertheless, knowledgeable experts on the subject matter were interviewed and any assertions are presumed to be strengthened by supportive literature. Moreover, the sensitivity of the rhinoceros poaching issue must be considered and



fear of any potential negative repercussions may have prevented some respondents from full disclosure.

This dissertation built on the limited body of social science and human dimensions research examining the poaching of rhinoceros by including three standalone journal articles that assessed stakeholder cognitions associated with this issue in South Africa. The primary objectives of this dissertation were to: (a) gain a more comprehensive assessment of stakeholder motivations, attitudes, and norms associated with the poaching of rhinoceros in South Africa; (b) understand stakeholder perceptions of trust, corruption, and punishment related to this topic; and (c) assess stakeholder perceptions of risks associated with this issue. The remaining chapters in this dissertation were organized as follows:

- The first journal article (Chapter 2) explored two research questions: (a) what are stakeholder attitudes and norms regarding the poaching of rhinoceros in South Africa; and (b) what do these stakeholders perceive as the drivers of the rhinoceros horn trade and motivations of poachers that led to the increase in poaching, and how do these differ among stakeholder groups?
- The second journal article (Chapter 3) built on some of the most substantive results from the first article by exploring three research questions: (a) what are stakeholder perceptions regarding corruption associated with the poaching of rhinoceros in South Africa; (b) how much trust do these stakeholders have in those who are responsible for protecting rhinoceros from poaching; and (c) what characteristics of punishment do these stakeholders believe offenders (i.e., poachers) should receive?

- The third journal article (Chapter 4) explored perceived risks and social psychological impacts among stakeholders living and working on the front lines of the rhinoceros poaching issue in South Africa. This article built on previous research by exploring two specific research questions: (a) how do stakeholders experience and perceive personal risks to themselves as a result of their involvement in rhinoceros conservation activities; and (b) what are their perceptions of risk (associated with the poaching of rhinoceros) to other members of the public?
- The conclusion (Chapter 5) synthesized the findings and contributions from the previous chapters, and summarized recommendations for management and future research.

The combined results and recommendations from the research presented in this dissertation can inform management and policy decisions, improve conservation and protection strategies, and provide a foundation for future research that expands on the findings presented here and extends this area of research to other rhinoceros range states (Duncker & Goncalves, 2017). The goal is not to make policy, but to provide descriptive information to inform planning, management, and policy decisions, and to give voice to several of the stakeholders involved in this issue.

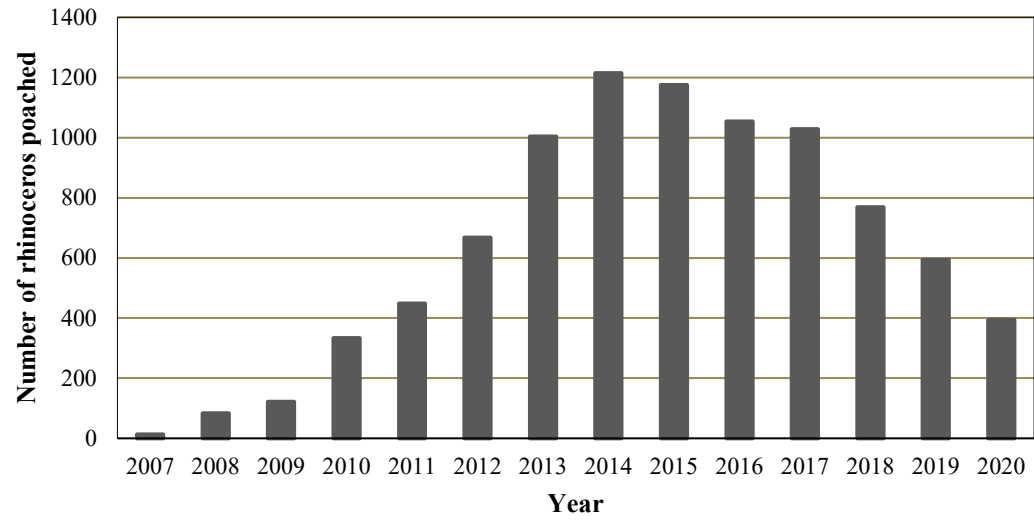


Figure 1. Number of rhinoceros confirmed poached in South Africa from 2007 - 2019.

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## **CHAPTER 2 - ATTITUDES AND MOTIVATIONS OF STAKEHOLDERS REGARDING THE POACHING OF RHINOCEROS IN SOUTH AFRICA**

### **Introduction**

Wildlife crimes generate as much as US\$20 billion annually, ranking alongside trafficking in drugs, arms / weapons, and humans as one of the largest transnational organized criminal activities (Scanlon, 2014). The African rhinoceros, once abundant across the continent, is a wildlife species that faces threats to its long-term survival due to syndicated poaching of its horns. Modern uses of rhinoceros horn include Traditional Asian Medicine and as a luxury product to demonstrate wealth and status among the upper middle class in many countries. Poaching of rhinoceros in South Africa increased greatly from 13 rhinoceros poached in 2007 to 1,215 poached in 2014. The country has experienced a decline in poaching since that time, with 394 rhinoceros reportedly poached in 2020 (Meldrum, 2020). This drop has been attributed by some as a result of enhanced security in Kruger National Park (KNP), the epicenter of the poaching, and national lockdowns starting in 2020 resulting from the COVID-19 pandemic (e.g., DEA, 2018), whereas others have argued that many rhinoceros that have been poached may not have been detected in certain terrains and large areas (Bale, 2018). Populations of rhinoceroses in KNP also dropped from more than 10,000 rhinoceroses in 2011 to 3,817 animals in 2019 (Africa Geographic, 2021). Even as the number of reported rhinoceros poached in KNP declined in the last few years, several provinces in other parts of South Africa experienced an increase in the number poached (DEA, 2020). Mortality rates continue to exceed birth



rates, keeping rhinoceros on an unsustainable path toward extinction (e.g., Ferreira, le Roex, & Greaver, 2019).

More rigorous research on the human dimensions of this issue is needed to understand what is driving humans to continue poaching rhinoceros. Human dimensions research has used two primary theoretical approaches for examining wildlife related issues: (a) cognitive approaches, and (b) motivational approaches (e.g., Pierce, Manfredo, & Vaske, 2001). The cognitive approach examines concepts, such as attitudes and norms, underlying the processes that lead from human thought to behavior. The motivational approach describes existing human behavior (i.e., why humans do what they do; Pierce et al., 2001; Vaske & Manfredo, 2012). In the context of the poaching of rhinoceros, the cognitive approach requires understanding the attitudes and norms of stakeholders (e.g., field rangers, private game reserve personnel), as these cognitions may influence development of policies and regulations concerning the poaching, trade, and legal hunting of rhinoceros. An attitude represents an individual's favorable or unfavorable opinion toward a person, object, issue, or action (Eagly & Chaiken, 1993). Norms involve behaviors that an individual believes society or significant people (e.g., village elder, parent, religious leader) want them to perform or think should be performed (Lapinski & Rimal, 2005; Shelby et al., 1996; Vaske & Whitaker, 2004), or standards of appropriate behavior that develop from observing how others in a group behave (Ajzen, 2000; Cialdini, Reno, & Kallgren, 1990). Information on attitudes and norms is useful because it can help to: (a) understand issues that are deemed favorable or acceptable such as whether the

poaching of rhinoceros is accepted or stigmatized within some groups, and (b) define standards for setting management targets.

The motivational approach is also relevant for understanding the human dimensions of poaching, including the motivations of individuals to poach rhinoceros and how these may vary both locally and regionally. Motivations are internal and external factors that initiate, guide, and maintain goal-oriented behaviors (Schunk, Meece, & Pintrich, 2014). Understanding why individuals engage in the poaching of rhinoceros can help to target public education initiatives and law enforcement programs designed to combat poaching (Muth & Bowe, 1998). Motivations related to poaching wildlife have been measured by asking poachers to report their own reasons for engaging in this activity (e.g., Mancini et al., 2011; Nijman, Oo, & Shwe, 2017). However, contacting and either interviewing or surveying poachers is challenging because they are difficult to identify and access using conventional research and sampling approaches (Nijman et al, 2017). A few studies have examined perceptions of other stakeholders about what they believe are the drivers of poaching and motivations of poachers (e.g., Chapman & White, 2019; Mmahi, & Usman, 2019; Wright, Cundill, & Biggs, 2018). Perceptions, which are somewhat related to attitudes, are the processes by which an individual interprets stimuli into something meaningful to them based on prior experiences (Lindsay & Norman, 1977). Understanding stakeholder perceptions based on their experiences and needs may inform management and policy tactics with high levels of implementation, support, and compliance (Duncker & Goncalves, 2017; Menzel & Teng, 2010). This article

explored aspects of stakeholder perceptions, attitudes, norms, and motivations regarding the poaching of rhinoceros in South Africa.

## **Conceptual Background**

### **Attitudes and Norms**

Both wildlife managers and human dimensions researchers use social psychological concepts and theories for assessing how stakeholders react to, understand, and influence issues related to wildlife management (Vaske & Manfredo, 2012). There are several social psychological concepts, such as attitudes and norms, that help to explain or predict a situation or behavior. Various theories have suggested and empirically shown relationships among these concepts (e.g., theory of planned behavior, theory of reasoned action, value – belief – norm theory, cognitive hierarchy; see Stern, 2018 for a review). These theories suggest that attitudes and norms are components of cognitive structures where they can influence behavioral intentions and predict actual behavior (Fishbein & Azjen, 2011; Fulton, Manfredo, & Lipscomb, 1996).

African cultures typically have traditional norms and are collectivist (e.g., Caldwell–Harris & Ayçiçeği, 2006). Collectivists tend to view social norms or group goals as being more important than their own personal attitudes and goals (Triandis, 2001). The behavior of collectivists can be determined more by social norms than by individual norms and attitudes, suggesting that social norms may have a stronger influence than personal attitudes on intentions and behaviors among African cultures (e.g., Van Hooft & De Jong, 2009).

Concepts such as the attitudes and norms of wildlife poachers and other wildlife related stakeholders have received some attention in the literature (e.g., Moreto & Lemieux, 2015; Rizzolo et al., 2017), yet few have been specific to rhinoceros poaching. Most studies in the context of human dimensions of rhinoceros poaching have been limited to a single issue or stakeholder group, or focused on limited geographic areas within South Africa or other countries. Examples of recent research in this context include community attitudes concerning the poaching of rhinoceros in Eswatini (formerly known as Swaziland; Mamba, Randhir, & Fuller, 2019), attitudes toward consumption of rhinoceros horn in Vietnam (e.g., Truong, Dang, & Hall, 2016), opinions about strategies for compliance and demand reduction (e.g., Sato & Hough, 2016), attitudes toward legalizing the trade in rhinoceros horns (e.g., Rubino & Pienaar, 2018; Wright, Cundill, & Biggs, 2016), and whether individuals in Yemen favor products from rhinoceros horns (e.g., Vigne & Martin, 2008). Given that South Africa continues to experience the highest poaching pressure on rhinoceros in Africa, information is warranted on the attitudes of various stakeholder groups toward this issue across a wide geographical area within this country because priorities may differ among groups and locations.

### **Drivers and Motivations**

The act of poaching a rhinoceros is often dictated by value and opportunity. Venter (2003) described poachers engaged in transnational crime as either single opportunists or organized criminal syndicates. Muth and Bowe (1998) developed a detailed typology of the motivations for poaching within the context of North America. This typology included motivational categories such as commercial gain or

household consumption, recreational satisfaction, trophy poaching, thrill killing, poaching as rebellion, poaching as a traditional right of use, and disagreement with specific regulations (Muth & Bowe, 1998).

Like economic affluence (e.g., Knapp, 2012; TRAFFIC, 2008), poverty may also act as a motivator or encouragement for an individual to poach a rhinoceros, but the driver (i.e., what initiates the act of poaching) is often the demand for wildlife (e.g., rhinoceros) products from wealthier nations (e.g., Bennett, 2011; Duffy & St. John, 2013). Although economics may be a definitive driver, other stochastic influences (e.g., drought, resource value) may also be present. Several different opinions have been expressed regarding factors that led to the dramatic increase in poaching of rhinoceros up to 2014. For example, some studies have argued that it was the listing of the rhinoceros in 1977 as a CITES Appendix I species that contributed to their decline by causing artificial scarcity, making them more valuable to traders and consumers (e.g., Rivalan et al., 2007). The increase in poaching has also been attributed to illegal traders fabricating stories that rhinoceros horn can cure cancer (Borchert, 2012). Ineffective anti-poaching efforts, proliferation of weapons in some countries, government corruption, increases in organized criminal syndicates (multilevel criminal networks), public apathy, ineffective government policies, inadequate legal penalties (e.g., lack of political will), complex restrictions on hunting, and prohibitions on legal wildlife trade have also been identified as some of the many other drivers of poaching (e.g., Avis, 2017; Bennett, 2011; Duffy, 2010; Milliken & Shaw, 2012; Sekgwama, 2002). Political, social, and economic instability may also drive some of the poaching (e.g., Dudley, Ginsberg, Plumpre, Hart,

Campos, 2002; Emslie & Brooks, 1999). Taken together, poaching is not a simple phenomenon; it involves many people, practices, organizations, and networks (Duffy, 2010). Simply assuming that impoverished individuals sell and trade wildlife products for food or money can mask the complexity of the problem and the people and organizations involved (Hubschle, 2017; Witter & Satterfield, 2019).

Research has examined motivations associated with the poaching of wildlife (e.g., Eliason, 2004; Harrison et al., 2015; Hübschle, 2017; Kahler & Gore, 2012; Kaltenborn, Nyahongo, & Tingstad, 2005; Muth & Bowe, 1998; Weru, 2016). Motivations for individuals to poach rhinoceros, for example, may include human-wildlife conflict, antagonistic attitudes toward rangers or the establishment of protected areas, the desire for prestige or to possess symbols of power often experienced in trophy hunting, perceived autonomy, or desire to feel a sense of mastery and control over animals (e.g., Anthony, 2007; Campbell & Shackleton, 2001; Duffy, 2010; Eliason, 1999; Forsyth & Marckese, 1993; Kellert, 1978; Moreto, 2019). Limited research, however, has examined stakeholder perceptions of motivations with regards to the poaching of rhinoceros, especially in protected areas in South Africa. It is also unclear what factors, or combination of factors, motivate rhinoceros poachers and drive the trade in rhinoceros horn. Motivations may be context-specific and may vary widely depending on the geographic region, ecological conditions, social context (e.g., culture, religion), politics, or economy. Understanding the drivers and motivations for why individuals engage in the poaching of rhinoceros is crucial for informing effective anti-poaching initiatives and

solutions that achieve the desired goal (e.g., reduced poaching; Keane et al., 2008; Kuhl et al., 2009; Muth & Bowe, 1998).

### **Research Questions**

The broad objective of this article was to determine the attitudes, norms, and perceived motivations of numerous stakeholder groups regarding the poaching of rhinoceros across South Africa. This article built on previous research by exploring two specific research questions. First, what are stakeholder attitudes and norms regarding the poaching of rhinoceros in South Africa? Second, what do these stakeholders perceive as the drivers of the rhinoceros horn trade and motivations of poachers that led to the increase in poaching, and how do these differ among stakeholder groups?

### **Methods**

Data were collected from stakeholders between June and August 2014 across six provinces in South Africa (Gauteng, Limpopo, Mpumalanga, KwaZulu Natal, Eastern Cape, Western Cape). KNP and its neighboring game reserves were also selected as part of the study area based on past, current, and potential future problems associated with the poaching of rhinoceros. Communities and private reserves along KNP's western boundary within approximately a 20 km (12.4 mi) distance from the KNP boundary were also sampled. Agencies and nongovernmental organizations (NGOs) in South Africa that have demonstrated an interest in the issues of poaching and conservation of rhinoceros were also sampled.

The sample was obtained from a combination of purposive and snowball (i.e., chain referral or respondent-driven) sampling (Bernard, 2012). Fifty-four in-person,

semi-structured interviews (Robson, 1993) were conducted across seven stakeholder groups: private game reserve personnel ( $n = 10$ ), government personnel ( $n = 15$ ), NGO personnel ( $n = 12$ ), wildlife veterinarians ( $n = 4$ ), community members ( $n = 6$ ), private field rangers ( $n = 5$ ), and tour operators ( $n = 2$ ). Interviews were audio-recorded, transcribed verbatim, and analyzed. More than 142 hours of interviews with a mean length of 158 minutes each were recorded. The semi-structured interview schedule and set of questions was pretested to ensure that questions were understood. Interviews were conducted in English when possible. Four community members, however, did not speak English, so their interviews were conducted with the help of a local research assistant who translated. Detailed notes were written during the interview for one participant who declined to being recorded. With this number of interviews (i.e., 54), the qualitative data were reaching saturation with limited new information or themes observed in the interviews conducted near the end of the data collection period.

Attitudes were assessed by asking stakeholders questions such as “do you believe that the increase in the poaching of rhinoceros is a problem / bad thing,” and norms were measured with questions such as “do you think that others in this location or nearby believe that people important to them approve of them poaching rhinoceros” (see Appendix)? To assess perceptions of motivations and drivers, stakeholders were asked questions such as “what do you think motivates people to poach a rhinoceros,” “why do you think poachers targeted rhinoceros (in specific areas),” and “what do you view as some of the major reasons for why the poaching of rhinoceros has increased in South Africa since 2008?”



To identify patterns and links among responses, MS Word and NVivo®, a qualitative data analysis software, were used for organizing data and developing a coding scheme (Miles & Huberman, 1994; Strauss & Corbin, 1998). Differences in responses among stakeholder groups were assessed to indicate where any divergence in responses occurred. To ensure confidentiality, participants were given pseudonyms that identify the stakeholder group to which they belonged along with an interview number (COMM = community member, GVT = government personnel, NGO = non-governmental organization personnel, PGR = private game reserve personnel, RANG = private field ranger, TOUR = tour operator, VET = wildlife veterinarian).

To measure intercoder reliability and agreement, a research assistant was recruited and trained. Intercoder reliability assesses the degree that coding of interview text by multiple coders is similar to reduce bias in interpretation, as coders may differ in their interpretation of the text's content and themes (Hruschka et al., 2004). Twenty (37%) randomly selected, full-length interview transcripts were coded separately by both the assistant and the lead researcher (Hodson, 1999). Results were compared and discrepancies in coding were reconciled using a negotiated agreement approach between the researcher and assistant (e.g., Campbell, Quincy, Osserman, & Pedersen, 2013). Following the rationale of Campbell et al. (2013), the percentage of agreement was deemed the most appropriate calculation for intercoder reliability. An initial intercoder reliability of 86% was achieved, with 98% intercoder agreement after the negotiations.

## Results

Based on the analyses, five major themes were identified: (a) attitudes toward government, (b) attitudes about communication, (c) attitudes about potential impacts from the poaching of rhinoceros, (d) normative influences associated with the poaching of rhinoceros, and (e) perceived drivers and motivations to poach. There were also multiple sub-themes within each of these five major themes. Contextually relevant quotations were selected to illustrate assertions and show nuances. Themes and subthemes were organized from those most frequently mentioned by respondents to those least often mentioned.

The first research question focused on stakeholder attitudes and norms regarding conservation and poaching of rhinoceros. All respondents indicated that poaching of rhinoceros is a problem with the negatives far outweighing any positives. For example, NGO25 stated:

It [rhinoceros poaching] is a crime that is in the same league as drug trading and human trafficking. Those people are also involved in rhino horn. It needs to be seen as an economic and social crime rather than just a conservation crime. This is a serious economic threat to the country. The crime conduits that are developing are also now facilitating other crime activities and vice versa, and we are losing a national heritage asset.

Stakeholders expressed a multitude of attitudes associated with protecting and conserving rhinoceros. Several stakeholders emphasized the importance of rhinoceros to future generations. For example, PGR45 stated, “It’s a dinosaur. It’s been around a long time, and if we were to let it go in our generation – I’ve got kids. And, I want to leave a strong population of *all* animals.” Several rhinoceros owners expressed that they were passionate about conserving the species as the primary reason for owning rhinoceros. For example, NGO13 said, “I live my life around rhino and I’m really

lucky and I'm kind of really blessed, and at the end of the day if all I can ever really achieve is the protection of these ones and they thrive...I've done a great job."

NGO39 said, "I felt it was a rejected animal. I had been through a lot of rejection in my life, so I identified with that."

## **Attitudes toward Government**

### ***Political Will***

Many respondents mentioned political interference and a lack of political will as major hindrances to protecting rhinoceros from poaching. Political will refers to the "commitment of actors to undertake actions to achieve a set of objectives and to sustain the costs of those actions over time" (Brinkerhoff, 2010, p. 1). Most of the field rangers interviewed expressed strong negative attitudes toward the level of effort put into apprehending poachers when poachers are released on little to no bail only days later, with their vehicles and weapons returned to them on release. For example, RANG21 emphasized:

You have no understanding what efforts, what resources, what money went into this investigation and to catching these people. I had to pay an informer. The informer was risking his life. There is travelling costs, my time, I involved some of the community members, I involved anti-poaching guards. We went and sat there until three o'clock in the morning, waiting in ambush to catch these people. Thousands of Rand [South African currency] went into this and they get released.

PGR42 stated, "On 41 separate occasions in a three-month period, we tried to engage the Department of Environmental Affairs about the rhino poaching issue and we did not receive a single...they didn't seem to take rhino poaching seriously at all."

GVT49 believed the biggest concern was legislation in neighboring Mozambique: "In Mozambique it is not a serious offense to be arrested or be found in possession of

rhino products; you can go into the park [KNP] with no fear that if you come back you will be arrested.”

VET52 pointed out, “Once you get politicians involved in operational stuff, it is not a good situation. They don’t understand the logistics. That usually results in outcomes that are completely unworkable, and you lose time.” PGR38 held similar negative attitudes toward politicians, stating, “Communities in Africa and African politicians don’t care. If politicians cared, this would be finished – if they made flora and fauna extraction a zero-tolerance thing.” VET33 suggested that the end of the apartheid regime marked the change in political will:

Prior to 1994, we had much better security and much better parks systems looking after animals. General law enforcement in rural areas was far superior to now, and the political will with regards to environmental issues was far superior. We have got into the perfect storm when we have got poor political will, poor law enforcement, and a huge potential market in southeast Asia.

Some respondents also referenced the overabundance of institutions and actors involved in the rhinoceros poaching issue as a reason why political will in South Africa was perceived to be absent or wasting resources, time, and direction. For example, PGR30 said, “...it is very ineffective the way it’s being done now. There’s too many [NGOs]...they come out from under every rock. How effective are they being; are they wasting money on things...which are ineffective.”

Although there were no clear differences among the stakeholder groups in their attitudes about political will in South Africa, a few respondents held positive attitudes about this topic. GVT50, for example, said, “I can honestly say that our political leader [minister] and the portfolio committee is behind us; there’s great traction.” NGO39 also stated:

South Africa doesn't lack political will...the United States and the United Kingdom so far as Mozambique is concerned – they lack political will. Why is it that they haven't come down? The rhino doesn't belong only to South Africa. They belong to the world.

### *Limited Resources*

Many respondents, such as GVT46, expressed negative attitudes toward the main focus on paramilitary tactics over ecological tasks carried out by field rangers: “By taking away some of my tasks, I'm not here to play soldier-soldier all day, that's not why I'm here...we used to do vegetation condition analysis and that task has been taken away from us. There's constant talk of taking other things away, so that is not a good thing for us.” Conversely, GVT47 was among the few interviewees who believed that he maintained a balance between conservation and anti-poaching: “I'm balancing the efforts because if I don't keep that equilibrium at a 50 / 50 level, the other will lapse and it's going to be very serious destruction because you'll abandon the other part and concentrate only on the rhinos.”

Several respondents, such as VET44, explained that funding has not been channeled for other wildlife-related issues where it is needed because it appears to have all been directed to the rhinoceros poaching issue: “We can't get the funding for some wild dogs that have broken out and are killing goats all over the place; this [rhinoceros poaching issue] has taken absolute priority over everything else.” PGR27 stated, “Everyone is focusing on rhino poaching while things like lions and anteaters (pangolins) are closer to extinction than even black rhino.” GVT50 commented that there are no departments from which to take more resources to use toward rhinoceros conservation.

All stakeholder groups interviewed felt that resources for protecting and conserving rhinoceros were limited. There were, however, some differences among the groups in their attitudes about resource appropriation. The majority of respondents who voiced concerns over resources being funneled to rhinoceros protection efforts and away from other services were on the front lines, including those involved in anti-poaching efforts or responding to poached rhinoceros (e.g., field rangers, private game reserve personnel, government officials working within KNP, wildlife veterinarians). For example, several private game reserve personnel expressed strong attitudes about powerlessness and were critical that the government was not offering them any support in the form of information-sharing or financial resources, yet they took great financial and safety risks having to protect rhinoceros on their properties.

For example, PGR38 expressed frustration:

It's expensive to protect rhino. It cost close to a million dollars, that's what I've put in. My friends think I am bloody mad to get another rhino. Rhino are becoming devalued. If you have herds of cattle, you have full control. If you plow down the trees, no one has a say, but as soon as you put rhino on your land, everyone from the outside has a say and they take control of what you can do on your own land.

In contrast, GVT24 considered private game reserves to have a fiscal advantage over public reserves and national parks, as they may benefit from private donations: “The private guys have got a massive advantage over us because for us to spend money to get equipment, everything we have that we use for the rhino anti-poaching patrols is donated, and all the rangers buy this equipment out of their own pockets.”

### **Attitudes about Communication among Stakeholders**

Respondents indicated that poor communication and support were serious hindrances to stemming the poaching of rhinoceros. GVT24 explained that a silo

effect happens in which communication does not exist among the national parks, provincial reserves, local governments, provincial and private owners, and non-profit organizations: “There’s no support between these different organizations and as far as broader conservation goes, it’s killing conservation ethics and everybody’s just looking after their own little portion.” NGO51 indicated that information gathered by private anti-poaching organizations is sometimes withheld from other anti-poaching organizations, field rangers, and police to make more money, and that information “almost becomes their product.” NGO13 stated:

I’ve knocked on the doors and sat around and drank a million cups of coffee and had biscuits with SANParks (South African National Parks) people and I’ve just given up and just walk away. You follow up with an email and you must write to them 17 times and no one ever responds, and you just think ‘You don’t really care’...If someone gets in touch with me, I deal with it straight away. You’ve got to react quickly.

Some other respondents, although expressing an attitude that poor communication was a problem among stakeholders, did not suggest that information was being withheld for financial gain. NGO54, for example, said, “there are a lot of politics and I don’t think the left hand knows what the right hand is doing.”

Some respondents held negative attitudes toward KNP and what they perceived as a lack of transparency: “Kruger National Park is a beast. It is not your friend...people talk about a Berlin Wall across the eastern boundary, razor wire, infrared, drones” (GOV48). NGO51 expressed that SANParks, including KNP, “...pretty much kept its doors closed.” However, many respondents who worked closely with KNP explained that people were unaware of the good that KNP was doing. GVT47, for example, said, “People need to know about the problem...My worry is tourists – they will say anything...that little knowledge about the problem,

that's what is dangerous because people comment, and they've got no idea what's going on. It must be said carefully because it can drive those [tourists] away." There were no major differences among the stakeholder groups regarding attitudes about communication; all stakeholder groups in this study indicated strong support for improved communication and transparency among stakeholders.

### **Attitudes about Potential Impacts from the Poaching of Rhinoceros**

Although all respondents indicated that the poaching of rhinoceros is a problem with the negatives outweighing any positives, attitudes about peripheral benefits and negative impacts of the poaching crisis were acknowledged by some respondents.

### ***Umbrella Protection for Other Species***

Several respondents opined that the poaching of rhinoceros could lead to an increase in protection for other species, as strategies put into place for rhinoceros could serve as umbrella protection for other species: "The run of the mill poacher definitely is not going to come in here and set up a few snares" (RANG43). Several respondents, such as GVT48, indicated that efforts invested in protecting rhinoceros from poaching could benefit other species such as elephants: "We know elephant poaching is coming our way. It's already started." VET16 explained: "The fact there is rhino poaching could bring attention to conservation. It is bad, but one positive spinoff from poaching is that the awareness it has created has been good not only for the rhinos, but when the rhinos are gone, potentially the next species."



### ***Tourism***

Many respondents were concerned that tourism has been impacted or will be because of the poaching situation. VET33 stated, “tourism might increase as tourists want to see rhino before they disappear.” However, NGO28 said, “It is impacting our tourism because of social media; more people in America know there is a problem here so they [American tourists] are visiting less.” TOUR29 expressed, “If we become a ‘Big Four’ [instead of the well-known ‘Big Five’ – lions, leopards, elephants, African buffalo, rhinoceros] destination, our tourism is going to plummet. After the mines [coal, platinum, gold, diamonds], it is one of the biggest employers in South Africa...in the rural areas.” GVT48 voiced concern over the impacts of poaching on tourists: “It has already happened that a mutilated rhino stumbles into the street in front of tourists and dies.”

### ***Employment***

Some respondents indicated that an increase in employment with the increase in poaching of rhinoceros could be a positive outcome arising from the poaching situation. For example, GVT32 said, “Who is smiling are the guys involved in security because suddenly now they’ve got jobs all over the place. They’re happy. It’s just like the NGO’s – as long as this thing keeps going, the more work they have.” Yet, other members of these same stakeholder groups did not equate this to a tangible benefit. GVT30, for example, argued, “it’s like saying the more you fill your jails with criminals, the more wardens you employ and that’s good for the country. No it’s not, because the crime is bad for the country in the first place.” GVT22 expressed concerns about employment through tourism: “The amount that is generated by the

state through tourism outweighs the so-called job opportunities for the security industry...and can also be used to create other job opportunities. Yes, it [security jobs] might boom, but what if we reach a point where rhinos become extinct, where are these guys going to go?"

### ***Interdepartmental Cooperation***

Some respondents emphasized that the poaching situation has highlighted the importance and need for interdepartmental cooperation within the national, provincial, and local levels of government. For example, RANG35 stated: "I think it's professional jealousy. You'll have big professional rifts almost between intelligence agencies and detective agencies, so the challenge is to get those sorts of legs to work together."

There were no major differences among the seven stakeholder groups regarding these attitudes about umbrella protection, tourism, and employment. Interdepartmental cooperation, however, was mentioned frequently as a concern by private game reserve and government personnel, whereas the other stakeholder groups did not voice this as a concern.

### **Normative Influences Associated with the Poaching of Rhinoceros**

When asked if people feel that it is acceptable to poach this species, many respondents suggested that most people are indifferent. A few respondents held normative beliefs that peer pressure influences individuals to poach rhinoceros. For example, COMM2 said:

Say I was lucky enough and I got that rhino. I say he just builds a good house or...a brand-new car...and he never worked before. All he did was get a rhino horn and sold it to somebody...it will push you in a way to like this way of doing things that is not right.

Most community members who were interviewed stated that the poaching of rhinoceros was not an accepted norm within most communities. Several respondents from other stakeholder groups also indicated that poachers were often concerned with what their communities and other people thought about them with regards to the poaching of rhinoceros. GVT22 recounted what he learned when he visited Mozambique where he said four rhinoceros poachers were arrested or killed in KNP in 2011:

When they leave the village, they tell their spouses that ‘we are going to work.’ To work has dual meaning, in the sense that they are coming to South Africa to look for a job opportunity...but on the other meaning that we are going to South Africa to ‘work’ because we are going to Kruger National Park, but that is not clear to the families when they leave. So the family leaves, they know that our son, he went to South Africa to work [job opportunity]...then South Africa had to explain, ‘No these guys, they were found with firearms. Actually, they were firing back at the rangers and the police.’ And they [family members] say ‘No, they were looking for work.’

RANG35 stated, “You don’t want to be labeled a rhino poacher in South Africa, you know it’s name and shame, it’s like a big thing.”

Community members opined that the poaching of rhinoceros was viewed by their communities as problematic. GOV1, a community member who worked for a provincial game reserve, emphasized that poachers will consider the consequences of their actions (i.e., poaching) before they do it, and what others in their community will think of them. He stated that they will think, “Are the community going to accept me as a person or are they going to just think that I am a thief? Those people have got heart, but because of poverty, it’s a problem.” He elaborated by emphasizing that if a poacher is shot while carrying out a poaching job, the families and communities will be affected. “The community will look at them in a different way because they will

live out of the stolen money or out of the stolen goods – something that they were not supposed to have. Each family wants to have pride” (GOV17).

RANG43 shared a different opinion, suggesting that poachers do not respect their tribal leaders and would not be concerned about approval from others: “No, because they’re...the average age of your rhino poachers here is young, late 20s, early 30s. They would be the crowd in a rural community where the tribal leaders, Ndunas, would say to them, ‘Hey, you will pay seven cows,’ and they would say, ‘No chap. That’s old and I refuse.’” This respondent also indicated that the traditional tribal system does not allow for the uplifting of one individual over that of the tribe, except for the tribal leader:

Where people come in and they’ve got a lot of cash and they start to flaunt it, and they build a house bigger than that of the Nduna, it can be a problem there. But, it does depend on the community, because if the general feeling in the community is anti-establishment, then they will know that the house is being built with rhino horn and they will approve of it for that reason.

Respondents from all stakeholder groups, except for the community members who were interviewed, lamented that poachers are viewed as ‘Robin Hoods’ or heroes in their communities, especially in Mozambican towns such as Massingir. For example, NGO23 stated that some poachers are the ‘good guys’ in the local communities because they are bringing disposable income into impoverished communities. NGO51 said:

Within some of the communities, people that are taking the risk and brought money back and bought new houses, new cars, and started business were looked up to. The funerals were sort of hero’s funerals. These were people who had gone out to essentially fight for their communities, or at least that was essentially how they were perceived.

## **Drivers and Motivations to Poach Rhinoceros**

The second research question focused on stakeholder perceptions of drivers of the rhinoceros horn trade and motivations of poachers that led to the increase in poaching. Most respondents believed that the chief demand for rhinoceros horn is no longer from Traditional Asian medicine, and instead attributed the increase in poaching to enhanced social status, ego, and wealth in Asia, particularly in Vietnam and China. Stakeholders who were interviewed often referred to this as the ‘Ferrari Factor.’

A few respondents suggested that poverty and hunger motivated some individuals to poach rhinoceros, but they were in the minority. Although many respondents acknowledged that poverty may be an initial motivating factor, they overwhelmingly expressed that greed quickly becomes the dominant motivation following the first poached animal. For example, RANG35 said, “At some level it’s survival because you can get a salary for 10 years in one hunt, but as time grows, greed hits...you buy a 4X4 SUV and the one-story becomes a two-story house.” He further reflected, “In some of the gangster communities, it’s power at some level. I’m untouchable, you cannot hurt me, I have 40 guys working for me.” PGR45 acknowledged this role of money as a motivating factor:

The dealings I’ve had with mercenary soldiers is purely money. They’ll come out, if the money is good and do the anti-poaching. If somebody comes out with a better offer, like in Iraq...and if the syndicates come out with a better offer in the rhino horn business, they’ll be gone tomorrow. It’s as simple as that.

One rhinoceros owner, NGO23, suggested that this poaching is a crime of opportunity: “We are arresting individuals who have regular jobs who are well

employed, who are not and should not be found where they are. It is purely a crime of opportunity and it is the new African lotto.”

PGR45 stressed that it is the disparity between the wealthy and poor that acts as a motivating factor for poachers:

This is a war; you can't couch it any other way. We have a helicopter. We have armed personnel and we kill people if they try to steal our rhino and they try to kill us as well. But in every war, you must look to the root of the problem. And the problem is from the days of apartheid, great wealth is in the hands of a few, and great poverty is in the hands of many. And that is an environment in which syndicates will thrive, whether it's drugs, ivory, or rhino horn.

Conversely, one respondent (COMM5), a sangoma (i.e., traditional healer), proffered: “Most of the people who are doing that [poaching] are Black people who are putting snares out for the purpose of meat and instead of catching other animals by accident, they catch rhinos. After killing the rhino, we just heard that they take away the horn, but for what reason we don't know.” Another community member, COMM8, suggested that: “Horn has got a delicate water. The reason why they need the horn is they use the water for manufacturing drugs...cocaine.” Several respondents mentioned that poachers often visit sangomas for Traditional medicine for the purpose of aiding in protection during illicit rhinoceros hunts. For example, GOV47 said, “They take the [rhinoceros] eyes, they take the ears, tail, knees, skin for the sangomas...maybe for their eyes, to see better, to hear a lot, to enhance their senses and things like that.” Lastly, NGO13 spoke of retribution as a motivating factor:

I have seen instances where communities have supported rhino conservation in a particular conservancy because there has been an organization that has been providing something into their community. The minute that's stopped or there's been an incident that's made that go sour, they've killed a rhino. They've killed a rhino because they can. They don't need a reason. They're sending you a message. It was more of a revenge thing because some other people went and upset them.

Taken together, respondents held these various views on primary drivers and motivations for poaching, and there were no apparent differences in these views among the stakeholder groups.

### **Discussion**

This article examined stakeholder attitudes and norms toward the poaching of rhinoceros in South Africa, and perceptions of drivers of the trade in rhinoceros horns and motivations of poachers. Interviews with members of multiple stakeholder groups across this country revealed five major themes: (a) attitudes toward government, (b) attitudes regarding communication, (c) attitudes about potential impacts from the poaching of rhinoceros, (d) normative influences associated with this poaching, and (e) perceptions of poacher motivations and drivers of the trade in rhinoceros horns. Although studies have examined specific attitudes of stakeholders toward interventions such as legalization of the trade in rhinoceros horns (e.g., Rubino & Pienaar, 2018) and consumption of horns (e.g., Truong, Dang, & Hall, 2016), this article examined diverse stakeholder attitudes, perceptions, and norms regarding poaching across South Africa, a nation with jurisdiction over important rhinoceros range (i.e., range state). Understanding these social-psychological concepts is paramount for informing, constructing, and conveying conservation messages and outreach programs (Kellert et al., 1996; Mengak, Dayer, & Stern, 2019).

Many respondents held unfavorable attitudes toward the South African government's response to the poaching, as most cited a lack of political will and financial support as hindrances to successful conservation of rhinoceroses in the country. More often, negative attitudes were expressed by those who believed they

were being failed in some way by the government, such as private rhinoceros owners who did not receive government subsidies or support, and some private anti-poaching personnel who felt they risked their lives to apprehend poachers who had little or no legal consequences. Rubino and Pienaar (2018) also found that their respondents had a lack of confidence in the South African government, but they cited corruption and land reform issues as the chief reasons for why they held negative attitudes about the management of rhinoceros. Rubino and Pienaar (2017) recognized that private rhinoceros owners in their study had non-financial benefits (e.g., passion for conservation) associated with owning rhinoceros, but attributed revenue as the reason for owning the animals. Findings here built on Rubino and Pienaar's (2017, 2018) research by investigating a multitude of other stakeholder groups. Many stakeholders (including rhinoceros owners and those who did not own rhinoceros) here indicated non-financial motivations, such as concern over risk of extinction and intrinsic value of the rhinoceros, as factors for protecting and conserving rhinoceros.

The results here also revealed that an overwhelming number of respondents across all stakeholder groups who were interviewed felt that poor communication and division among stakeholders was a serious problem. Several participants held a negative attitude and resentment that the government in general, and KNP managers in particular, did not communicate effectively with other stakeholders or show transparency. The failure of some stakeholder groups to be transparent has created negative attitudes and questioned the credibility and intentions of others. It is important that stakeholders understand that a lack of communication and transparency may lead to a culture of mistrust or result in a dismissal of their conservation



messages (Duffy et al., 2019; Jenkins, Mammides, & Keane, 2017; Shindler, Toman, & Mccaffrey, 2009), further complicating effective conservation. If information-sharing is deemed sensitive and might put rhinoceros at risk (e.g., Lubbe et al., 2019), this too should be communicated to various stakeholders.

Similar to Glenn, Ferreira, and Pienaar (2019), one of the findings here was that communication with the public about the poaching of rhinoceros was viewed as challenging and potentially problematic for tourism and South Africa's international reputation. Initially, visitation may increase if visitors believe that rhinoceros face extinction and want to see the species (i.e., known as "last chance tourism"), but visitation may drop with continued poaching activities in protected areas (Higham & Shelton, 2011; Lubbe et al., 2019; Orams, 2002). Smith and Porsch (2015) predicted that tourism could drop as much as 20% if rhinoceros were to disappear from the tourist landscape. Glenn et al. (2019) suggested that regular media reporting of statistics to the public (i.e., high number of rhinoceros poached, low number of poachers apprehended and sentenced, high value of rhinoceros horn, lack of public condemnation of poaching) could encourage poaching and reduce tourism.

The trend in tourism to South Africa since 2006 showed a decline in the growth of the contribution of tourist dollars to the economy (Stats SA, 2018), including an almost 8% drop in tourists between September 2018 and September 2019 (Department of Statistics South Africa, 2019). It is unclear how much of this, if any, can be attributed to the poaching situation, but several respondents voiced that the tourism sector has been impacted as rhinoceros poaching has gained international attention and tourists increasingly bypass South Africa partially because of issues

associated with the poaching situation. Some tourists, for example, have encountered injured or poached rhinoceros (e.g., SANParks, 2014).

There was also common agreement among respondents that the poaching situation highlighted the potential importance for cooperation within and across stakeholder groups. This suggests that respondents were aware of the problems associated with lack of transparency, communication, intelligence sharing, and cooperation among stakeholders, and they wanted change. Effective collaboration, information sharing, and meaningful discourse may be a common goal that can foster shared goals, agreements, trust, and accountability among stakeholders (Bryan, 2004). Effective solutions to the rhinoceros poaching situation may include stakeholder-led solutions that necessitate cooperation among diverse groups. The Department of Environmental Affairs (2020) attributed the slight decline in the poaching of rhinoceros in South Africa from 2015 to 2019 partially to “improved information collection and sharing amongst law enforcement authorities; better regional and national cooperation.” The findings of this study indicate the need to strengthen communication not only among law enforcement agencies, but also across different organizations and stakeholder groups, and across ranks when possible.

Another impact of poaching indicated by many respondents was that other wildlife species may benefit from the attention and efforts aimed at protecting rhinoceros. Poaching syndicates frequently encourage hunting other species of wildlife when species are depleted in certain areas (Christy, 2016). Many respondents expressed deep concern that elephants would be next in line if rhinoceros were poached out of the parks and reserves. In KNP, reported poaching of elephants was

almost non-existent from 2000 to 2013. Elephant mortality in KNP due to poaching jumped from two elephants in 2015 to 71 in 2018, demonstrating an upward trend as predicted by some stakeholders (DEA, 2019). Like rhinoceros, the number of elephants poached declined in 2019 to 31, but the impact is still unsustainable for long-term survival of the species in KNP (University of York, 2019). UNODC (2020) suggested that a more specialized law enforcement response is required for rhinoceros than elephants because rhinoceros poaching syndicates are more organized. Data on the efficacy of militarization and other efforts aimed at protecting rhinoceros, and their effects on conservation of elephants and other species, would be useful to collect in future research.

Respondents also noted that the poaching situation resulted in some employment opportunities, particularly in the security sector and for NGOs. However, respondents were quick to point out that this was likely a short-term benefit and that tourism was a more sustainable long-term source of employment with far-reaching benefits to communities. This result was also found in the case of Asian rhinoceros conservation in Nepal where local communities living in buffer zones adjacent to protected areas benefitted from rhinoceros-related tourism and received direct revenues from their own tourist enterprises (Martin, Martin, & Vigne, 2013).

Respondents were divided in their perceptions of normative influences associated with the poaching of rhinoceros. Several respondents perceived that poachers are concerned about what others think of them in terms of whether they are viewed essentially as heroes, or condemned by their community and people important to them. Similar to Rizzolo et al. (2017), group affiliation and the tolerance of the

group to poaching (e.g., deterrence) may lead to different outcomes with regards to whether an individual poaches or chooses not to poach. When capacity or political will within a state is low, as many respondents suggested here, and enforcement of rules is not carried out, then social norms may become more important (Jones, Andriamarivololona, & Hockley, 2008). Poaching of rhinoceros may also become normalized within some communities or groups (Green, 1990). Respondents did not indicate that they believed concern over potential intolerance or condemnation by people important to the individual would prevent the poaching of rhinoceros, only that it was a concern. These same respondents indicated that poachers may simply not openly reveal that they poach rhinoceros.

Other respondents surmised that poachers were either not concerned about what others important to them thought of poaching, or others were not opposed. In the context of rhinoceros, external authorities impose rules that may discourage the formation of social or collective norms with respect to the poaching of rhinoceros (Ostrom, 2000). Additionally, an increase in affluence can lead to individualism (Hofstede, 2011; Triandis, 2012). As poachers attract more wealth and act as independent agents, individual norms may preside over collective norms, and these norms may be inconsistent (Triandis, 1995). Although some variations in perceptions regarding normative influences were noted among individual respondents, there were no noticeable differences among the seven broader stakeholder groups.

As suggested in other literature (e.g., Lopes, 2019; Nožina, 2019) respondents indicated that the growing demand for rhinoceros horn originated in Vietnamese and Chinese consumer markets, although there was considerable uncertainty about

whether wealth and status, or Traditional Asian Medicine was a more significant driver. It is likely that drivers of the poaching situation are complex and multifaceted (e.g., Hübschle & Shearing, 2018). Respondents in this study perceived of five main motivations for why people poach rhinoceros: greed, power / status, poverty, income inequality, and being opportunistic. These findings provide convincing evidence that the drivers and motivations of rhinoceros poachers have likely not changed since the poaching crisis began in 2008, as Vietnam continues to surge as one of the fastest-growing world economies, and income inequality rises in both Mozambique and South Africa (The World Bank, 2018, 2019). Despite a slight increase in poverty reduction in Mozambique, rural areas where many rhinoceros poachers reside lag behind urban areas. Identifying principal motivations for the poaching of rhinoceros is central to informing and formulating national and global efforts to diminish current demand for horns in end-user nations.

For conservation efforts (e.g., campaign messages, methods to deliver messages to targeted end-users) to be effective, they must be based on these current motivations and drivers of the trade. What might be an effective strategy for end-users who believe in the medicinal value of horns may fall short of impacting end-users who desire horns for status. For example, wealthy, successful professionals who value rhinoceros horns for status may be fully aware of any evidence suggesting that the horn is medically ineffective. Thus, an awareness campaign may not be an ideal choice for this end-user. The failure of conservation efforts in preventing the extinction of the Javan rhinoceros has been partially attributed to the lack of

knowledge of conservationists surrounding the trade and ineffective conservation activities (Nguyen, 2017).

Future research can build on the results presented here in a couple of ways. First, a few respondents indicated that they could not share too much sensitive information due to perceived security concerns, leading to a potential response bias. Despite this, the sample size was ample for a qualitative study to depict responses from a variety of stakeholder groups (e.g., Boddy, 2016; Malterud, Siersma, & Guassora, 2016), and respondents were generally eager to provide their insights and opinions under the agreement of confidentiality. Second, this study was exploratory and provided insights from some stakeholders who are directly impacted by the rhinoceros poaching situation in South Africa. These results, however, are limited to a purposive sample of respondents in a subset of provinces and may not generalize to other people and locations. The applicability of these findings to other groups, countries, and South African provinces impacted by the poaching of rhinoceros represents a topic for additional empirical investigation.

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## **CHAPTER 3 - CORRUPTION, TRUST, AND PUNISHMENT ASSOCIATED WITH THE POACHING OF RHINOCEROS IN SOUTH AFRICA**

### **Introduction**

Wildlife crime is the fourth largest illicit trade globally (Interpol, 2019). One example is the illicit poaching of African rhinoceroses and trade in their horns, which are extensive and lucrative forms of crime that have been a focus of conservationists and criminologists for more than four decades as the species moves closer to extinction. South Africa, the epicenter of the poaching of rhinoceros, saw a dramatic increase in this poaching from 2008 through 2014, as organized criminal networks escalated their efforts ("Rhino Poaching Statistics," 2020). Even as the number of reported rhinoceros poached in South Africa has declined in the last few years, several provinces in the country have recently experienced an increase in this poaching (DEA, 2020a).

Poaching and illegal trade can be linked to corruption, which is defined as the abuse of power by a public official or private individual for personal gain or to benefit others (Transparency International, 2009). Corruption threatens wildlife conservation and provides a landscape for organized criminal syndicates to flourish. Corruption can be associated with a decrease in punishment, which is defined as a consequence or penalty imposed for an actual or perceived offense (Boyd, Gintis, Bowles, & Richerson, 2003). Corruption of actors involved in the chain of punishment for poaching offenses (e.g., police, judicial system) can reduce support for rule compliance (Sundström, 2012). Corruption and the characteristics of punishment (e.g., reduced severity) for offenders can also influence perceptions of



trust. Earle and Cvetkovich (1995) defined trust as the willingness to rely on those with decision-making responsibility to take actions that represent public interests. Developing trust is important for garnering support for decisions such as implementing anti-poaching interventions and sharing information.

There has been limited empirical research examining the rhinoceros poaching issue and these concepts (corruption, trust, punishment) in a criminological context through the lens of multiple stakeholder groups. In addition, few studies have investigated how the concepts of corruption, trust, and punishment relate to wildlife crimes such as the poaching of this species (Cochran, Lynch, Toman, & Shields, 2018; Strydom, 2017; van Uhm & Wong, 2019). Research on these issues has also typically engaged with these concepts separately. These concepts, however, are not independent as they can influence each other. To address these knowledge gaps, there is a need for more robust social science and human dimensions research on corruption, trust, and punishment as they collectively relate to the poaching of rhinoceros (Harris & Shiraishi, 2018).

The first objective of this article was to understand stakeholder: (a) trust in agents associated with rhinoceros conservation and protection, and (b) perceptions of corruption in the context of the poaching of rhinoceroses in South Africa. The second objective was to investigate stakeholder perceptions about punishments associated with this poaching. Understanding stakeholder experiences and perceptions related to these issues may inform management and policy decisions with high levels of support and compliance (Duncker & Goncalves, 2017).

## Conceptual Background

### Corruption

The concept of corruption is difficult to measure given its illegal and unethical nature. An individual may engage in corrupt acts for personal benefit or to benefit people in their network, community, or organization (Andersson & Heywood, 2009). Corruption can be understood as a spectrum of activities (Rose & Heywood, 2013) or more commonly as a dichotomous relationship of reciprocity that includes the subcategories of petty (i.e., involving non-elected officials, civil servants, low-level bureaucrats) and grand corruption (i.e., involving high-ranking officials, policymakers; Morris, 2011). A bribe paid to a police officer is one example of a violation of law and petty corruption. Grand corruption occurs along organized criminal networks and facilities, such as the movement of rhinoceros products along the supply chain from South Africa to retailers and end users in Asia (Hübschle, 2016). Corrupt acts associated with wildlife crimes may include bribery, collusion, patronage, embezzlement, fraud, extortion, abuse of discretion, diplomatic cover, permit abuse, and misappropriation of funds (e.g., Wyatt, Johnson, Hunter, George, & Gunter, 2018).

Corruption associated with wildlife crimes has been examined from the scale of the individual to larger state and institutional levels, and in various fields such as economics, political science, criminology, and other social sciences. Theories have been developed for understanding and explaining corruption and proposing anti-corruption initiatives. For example, the field of criminology includes opportunity theories that focus on opportunity structures that facilitate committing a crime as the

immediate cause of crime (e.g., rational choice theory, routine activity theory, situational crime prevention, differential association theory, strain theory, neutralization theory). In the context of the poaching of rhinoceros, examples of criminal opportunity structures include locating a rhinoceros to poach or gaining access to a protected area (Lemieux, 2014). In social psychology, other theories have explored attitudes, behaviors, motivations, and other concepts associated with engaging in corruption (e.g., theory of social norms, theory of planned behavior, prospect theory; Bicchieri, & Ganegonda, 2016).

Economic theories (e.g., principal agent theory, collective action theory, game theory) consider public sector corruption and its impacts on society, the economy, and the environment. Principal agent theory assumes that agents (e.g., public officials) serve to protect the interests of the principal (e.g., public, government, supervisors; Cheng, Wang, & Song, 2019). This theory assumes that individuals will monitor corrupt behavior and actions and interventions, such as monitoring, transparency, laws, and sanctions, are common when viewing corruption through this lens. Collective action theory has been applied to explain why systemic corruption persists despite laws making it illegal, and why corruption still resists these anti-corruption interventions (Ostrom, 2007). This theory considers corruption as a collective problem by emphasizing the importance of broader factors such as the larger social system, trust in others, and how society perceives the behaviors of others. For example, corruption is thought to exist because society views it simply as the way for getting things done, and people engage in corruption because there are so few individual agents enforcing anti-corruption interventions (Olson, 1965).

South Africa has a well-developed legal framework and legislation for reducing corruption, such as the Prevention and Combating of Corruption Act, but the country has a poor record of implementing and enforcing these laws (Transparency International, 2014). Some studies in sub-Saharan African countries have blamed the failure of anti-corruption reforms and interventions on the application of a principal agent approach and a lack of political will (e.g., Klitgaard, 2006), whereas others have argued that reforms based on this approach are susceptible to collective actions, motivations, pressures, and incentives. Naidoo (2013), for example, provided the example of supervisors pressuring subordinates to not enforce regulations because they believed it was acceptable, a lack of enforcement would not be sanctioned, and the superiors lacked the skills to enforce regulations (both a collective action and a principal agent problem).

Marquette and Peiffer (2015) maintained that anti-corruption initiatives should not overlook the fact that corruption may serve important functions and solve difficult problems for people, and alternatives to these problems are necessary for combating corruption. Corruption is a complex phenomenon that is context-specific, and multiple perspectives and theories should be considered when addressing this phenomenon and implementing anti-corruption initiatives (Marquette & Peiffer, 2015). This is especially the case for the poaching of rhinoceros in South Africa because this region is characterized by a collective culture with pervasive and systemic corruption (van Lennep, 2019). Where systemic corruption exists, individuals may take part in corrupt actions if they believe they are the collective or societal norm where leadership is lacking and not trustworthy (Marquette & Peiffer,

2015). Although research on corruption associated with wildlife crimes and conservation failures has increased in the last decade (e.g., Radermeyer, 2016), few studies have examined stakeholder perceptions of corruption, especially within the context of African species and their conservation (Gore, Ratsimbazafy, & Lute, 2013).

### **Trust**

Collective action theory suggests that corruption can be closely related to the concept of trust, as corruption can result in distrust that, in turn, can facilitate even more corruption. Some scholars have conceptualized trust as a psychological state where an individual feels vulnerable to another with expectations for competency, honesty, transparency, reliability, integrity, consistency, openness, and shared goals, norms, and values (Shockley-Zalabak, Ellis, & Cesaria, 2000). In this context, trust can be viewed as complex and multidimensional (Stern & Coleman, 2015).

Alternatively, trust can be characterized by positive expectations about another actor's conduct (Lewicki, McAllister, & Bies, 1998). This conceptualization is often used in the context of organizational trust, and views trust as more unidimensional with complete trust at one end of a continuum and distrust at the other end with these sometimes experienced simultaneously by an individual (Uslaner, 2018). For example, a person may be trusted for their ability to protect rhinoceros, but distrusted for their moral character. Conversely, an individual may be trusted in a social sense, but distrusted for their ability to protect rhinoceros (Wang & Murnighan, 2017).

Several types of trust have been identified in the literature as relevant to natural resource management (Stern & Coleman, 2015). Dispositional trust, for

example, is context-independent and refers to a general tendency or predisposition to believe in the positive attributes of others. An individual who has high dispositional trust may be less inclined to question an agency tasked with wildlife conservation (Riley, Ford, Triezenberg, & Lederle, 2018). Rational trust refers to an individual's perception of the ability of another to carry out a specific action that will result in an expected outcome of reciprocity or utility. For example, if wildlife rangers have been effective in preventing poaching, an individual who believes this is a good thing might have positive rational trust for these rangers. Social or affinitive trust (i.e., shared values, goals) and organizational or procedural trust (i.e., systems-based rules that decrease vulnerability) are also important for collective wildlife management (e.g., Riley et al., 2018; Stern & Coleman, 2015).

At the societal level, high trust is often associated with effective democratic institutions, socioeconomic equality, open economies, national wealth and prosperity, low crime, and the absence of corruption (Rahn & Rudolph, 2005). When trust increases in a society, corruption often decreases. Conversely, corrupt governments and leaders often perpetuate distrust throughout society (Graeff & Svendsen, 2013). Nationally, South Africa, the stronghold for rhinoceros, has high levels of social and economic inequality and correspondingly low levels of trust (Mmotlane, Struwig, & Roberts, 2010; Phiri, 2018). Uslaner (2013) argued that low trust leads to more corruption, which further erodes trust. However, trust does not always increase as corruption decreases because trust is a psychological construct that is difficult to regain once lost (Rothstein, 2005). Once a society falls into high levels of corruption,

trust is not easily reestablished even if the level of corruption declines (Uslaner, 2002).

Both collective action theory and the literature on corruption suggest that distrust is both a cause and effect of corruption (Morris & Klesner, 2010). Corruption facilitates crimes against wildlife, and both profits and distrust from these crimes facilitate more corruption (Bale, 2016). Corrupt institutions in natural resource management rely on cooperation and trust among their officials or between officials and the actors engaging in corrupt acts with the officials to ensure they honor agreements and no one takes legal action or retribution (Robbins, 2000). Hübschle (2016) argued that these relationships can be characterized by distrust, rather than trust.

At the organizational level, trust can affect stakeholder support for wildlife regulations, participation in conservation planning, and perceptions of risk (Schroeder, Fulton, Lawrence, & Cordts, 2017). In the context of the poaching of rhinoceros, the extent that individuals trust organizations and agencies responsible for protecting rhinoceros may also be related to their perceptions of corruption associated with these organizations and agencies, and risk associated with management actions (e.g., trade restrictions, disincentives, demand reduction, consumer state responses such as Chinese directives banning wildlife imports; Harper et al., 2015). It is important to identify the extent that stakeholders perceive distrust and believe corruption is occurring. Trust is also important in the effectiveness of punishment in a society; when trust is high, punishment is often more effective in promoting cooperation (Balliet & Van Lange, 2013).

## **Punishment**

Two particularly important contextual factors that can influence trust of punishers are the perceptions of how deserving the offenders are of punishment and the amount of punishment they receive. “Just deserts” theory, for example, suggests that punishment should be proportional to the crime (Kant, 1952). In contemporary deterrence theory, the potential offender considers issues such as perceived risk, motivations, social disapproval, and emotions (e.g., guilt, shame) when contemplating an action that could be perceived as immoral or illegal, and these issues can reduce undesirable behavior (Pickett, Roche, & Pogarsky, 2018). Examples of deterrence include fear of capture, physical harm, and imprisonment by law enforcement. For successful deterrence, punishment must be expeditious, certain, and of appropriate severity (Bentham, 1996).

Incapacitation is one form of punishment that centers on incarceration to stop offenders from committing more crimes. Incapacitation has challenges, as it is only effective during the time the offender is incarcerated, and the length of incarceration may be a less important deterrent than rates of detection, especially in the context of poaching in Africa (Leader-Williams & Milner-Gulland, 1993). Opponents of incarceration also point to its high costs and recidivism (repeat offender) rates, including in South Africa (Murhula, Singh, & Nunlall, 2019).

Rehabilitation is another response to stop offenders from committing the behavior again through planned interventions (e.g., skills development, physical and mental health services, spiritual support, social work services). In South Africa, rehabilitation of convicted prisoners has poor results when examined in relation to



recidivism rates. South Africa has a recidivism rate of up to 70% within three years of release from institutionalization (Hopkins, 2018). Proponents of rehabilitation highlight that efforts have failed due to resource limitations and non-existent or poorly structured rehabilitation and reintegration programs (Gerber, 2020; Muntingh, 2005).

Retribution, or the doctrine of proportionality, refers to the concept that the punishment should be proportionate to the crime, although it does not infer that the punishment be equivalent in severity to the crime. This form of punishment falls under a utilitarian philosophy and in the context of the poaching of wildlife, it ranges from fines to shoot-to-kill practices. Researchers have examined retribution and other forms of punishment in the context of poaching, including militarization (Duffy et al., 2019), armed rangers as deterrence (Barichievy, Munro, Clinning, Whittington-Jones, & Masterson, 2017), conservation law enforcement (Massé, 2019), shoot on sight (Messer, 2010), and sentencing for environmental crimes (Cochran, Lynch, Toman, & Shields, 2018). Given that South Africa continues to experience the highest poaching pressure on rhinoceros in the world, informing solutions necessitates understanding important stakeholders and their perspectives on corruption, trust, and punishment.

### **Research Questions**

This article built on this previous research by exploring three research questions. First, what are stakeholder perceptions regarding corruption associated with the poaching of rhinoceros in South Africa? Second, how much trust do these stakeholders have in those who are responsible for protecting rhinoceros from

poaching? Third, what characteristics of punishment do these stakeholders believe offenders (i.e., poachers) should receive?

### **Methods**

Data were collected from stakeholders between June and August 2014 across six provinces in South Africa (Gauteng, Limpopo, Mpumalanga, KwaZulu Natal, Eastern Cape, Western Cape). Kruger National Park (KNP) and its neighboring game reserves were also selected as part of the study area based on past, current, and potential future problems associated with the poaching of rhinoceros. Communities and private reserves along KNP's western boundary within approximately a 20 km (12.4 mi) distance from the KNP boundary were also sampled. Agencies and nongovernmental organizations (NGOs) in South Africa that have demonstrated an interest in the issues of poaching and conservation of rhinoceros were also sampled.

The sample was obtained from a combination of purposive and snowball (i.e., chain referral or respondent-driven) sampling (Bernard, 2012). Fifty-four in-person, semi-structured interviews (Robson, 1993) were conducted across seven stakeholder groups: private game reserve personnel ( $n = 10$ ), government personnel ( $n = 15$ ), NGO personnel ( $n = 12$ ), wildlife veterinarians ( $n = 4$ ), community members ( $n = 6$ ), private field rangers ( $n = 5$ ), and tour operators ( $n = 2$ ). Interviews were audio-recorded, transcribed verbatim, and analyzed. More than 142 hours of interviews with a mean length of 158 minutes each were recorded. The semi-structured interview schedule and set of questions was pretested to ensure that questions were understood. Interviews were conducted in English when possible. Four community members, however, did not speak English, so their interviews were conducted with the help of a

local research assistant who translated. Detailed notes were written during the interview for one participant who declined to being recorded. With this number of interviews (i.e., 54), the qualitative data were reaching saturation with limited new information or themes observed in the interviews conducted near the end of the data collection period.

Perceptions of corruption were ascertained by asking respondents questions such as “what forms of unethical behavior or dishonesty, if any, do you believe occur among officials and other stakeholders responsible for protecting rhinoceros or regulating the trade” and, if affirmative, “what factors do you think contribute to these types of unethical behavior associated with poaching of rhinoceros” (see Appendix)? Trust was assessed with questions such as “how much trust and confidence do you have in each of the following entities to protect rhinoceros from poaching and enforce the law” (e.g., South African Police Service [SAPS], South African National Defence Force [SANDF], private field rangers)? To assess perceptions of punishment related to the poaching of rhinoceros, respondents were asked questions such as “what is your opinion on penalties that are given out for convicted poachers” and “do you think a rhinoceros poacher can be rehabilitated, and why or why not?”

To identify patterns and links among responses, MS Word and NVivo®, a qualitative data analysis software, were used for organizing data and developing a coding scheme (Miles & Huberman, 1994; Strauss & Corbin, 1998). Differences in responses among stakeholder groups were assessed to indicate where any divergence in responses occurred. To ensure confidentiality, participants were given pseudonyms that identify the stakeholder group to which they belonged along with an interview

number (COMM = community member, GVT = government personnel, NGO = non-governmental organization personnel, PGR = private game reserve personnel, RANG = private field ranger, TOUR = tour operator, VET = wildlife veterinarian).

To measure intercoder reliability and agreement, a research assistant was recruited and trained. Intercoder reliability assesses the degree that coding of interview text by multiple coders is similar to reduce bias in interpretation, as coders may differ in their interpretation of the text's content and themes (Hruschka et al., 2004). Twenty (37%) randomly selected, full-length interview transcripts were coded separately by both the assistant and the lead researcher (Hodson, 1999). Results were compared and discrepancies in coding were reconciled using a negotiated agreement approach between the researcher and assistant (e.g., Campbell, Quincy, Osserman, & Pedersen, 2013). Following the rationale of Campbell et al. (2013), the percentage of agreement was deemed the most appropriate calculation for intercoder reliability. An initial intercoder reliability of 86% was achieved, with 98% intercoder agreement after the negotiations.

## **Results**

Based on these analyses, three major themes were identified: (a) perceptions of corruption and trust associated with police, (b) perceptions of corruption and trust associated with non-police agents or agencies responsible for protecting rhinoceros from poaching, and (c) perceptions about the characteristics of punishment for rhinoceros poachers. There were also multiple sub-themes within each of these three major themes. Contextually relevant quotations were selected to illustrate assertions

and show nuances. Themes and subthemes were organized from those most frequently mentioned by respondents to those least often mentioned.

### **Corruption and Trust**

The first research question addressed perceptions of corruption in the context of the poaching of rhinoceros, and the second research question addressed perceptions of trust in those responsible for protecting and conserving rhinoceros. Given that most respondents alluded to corruption when describing trust and vice versa, this section discussed these two concepts together. There were no major differences among the seven stakeholder groups in their perceptions regarding corruption and trust. All respondents also stated that corruption had increased and most suggested that this issue should be a high priority. For example, VET16 stated, “If it wasn’t for corruption, we wouldn’t have this [rhinoceros poaching].”

### ***Police (SAPS)***

Police corruption was referenced most often by respondents when referring to the poaching of rhinoceros. Bribery and collusion were cited as the predominant acts of corruption occurring among police officials. Other acts of corruption mentioned included patronage (i.e., power to control appointments), issuance of false permits, information leakage, delays in prosecutions, purposeful destruction of crime scene evidence, and lost docket. For example, PGR45 stated, “They are rotten. The Skukuza police were caught with rhino horn...yesterday some other policeman has been caught in Hillbrow with rhino horn.” NGO51 stated, “You have cops with criminal records who were recruited. Corruption is deeply entrenched in the police force in South Africa.”

Many respondents stated that it is common for individuals who poach rhinoceros to be involved in other criminal activities, including the drug trade, car hijacking, money laundering, human trafficking, diamond smuggling, weapons possession, and poaching other species. Police are linked to some of these activities. COMM2 explained, “You cannot talk about rhino poaching without talking about the other forms of crime. It goes hand-in-hand because you cannot use your own firearm and you have to bribe to get a gun and who do you bribe? You bribe the police officers.” GVT49 stated, “The poachers don't use licensed firearms, so you must commit some crime to get a firearm. It can be a normal housebreaking, armed robbery, it can even be murder... different crimes can be committed just to get some of the tools to kill rhinos.” GVT47 added, “Police get corrupted to take out firearms from police stations, to transport poachers, to transport horns...so, rhino poaching triggers a lot of crimes.” NGO28 said, “People I talk to could be participating in rhino poaching for all I know. The police are involved.” RANG10 said:

They have infiltrated the formal unit that the police force use...Then the police force, all of us work together and the next morning a rhino has been shot in another part. They distract you to the east, then strike you in the west. Nobody wants to phone the police anymore because none of us trust the police. There is that big distrust, so the local communities are far more likely to trust someone like ourselves than the police force. It is going to be a very special few who don't become corrupt; there is so much of it.

Most respondents expressed strong distrust in the ability of the SAPS to protect rhinoceros, with issues of corruption cited as the primary reason and incompetence as a secondary reason. RANG43 said, “They [SAPS] will dominate the crime scene and they've destroyed crime scenes.” Likewise, VET44 said:

The average policeman will botch things, deliberately. There was a case, it was the first time I worked with him. He was from their forensic side of things. He

collected evidence that he found at the scene. He puts it in his bag and he hasn't sealed those things. He said he would seal them when he gets to the police station. I said no, you seal them here. Evidence disappears. Either because it is too much effort and he really doesn't care, it is just a rhino, or he is being paid to botch these things.

A few respondents also believed there was little cooperation among police: "There's just way too much political infighting. The level of cooperation is poor and that's a big concern" (PGR30). Many respondents suggested that individuals within specialized units (e.g., Hawks Directorate for Priority Crime Investigation, SAPS Stock Theft and Endangered Species Unit, SAPS Special Task Force) may be more trustworthy than SAPS in general, but they were limited in their scope of practice and what they could do. VET44 said, "the specialist unit...seems to attract people who care quite passionately about wildlife and investigating wildlife crime."

Some respondents did not trust any police, including the specialist units. For example, NGO28 explained, "Private rhino owners find it difficult to give up information about how many [rhinoceros] they have got and what they have got because nobody trusts them [Hawks] here because of the corruption. I have been told by top prosecutors that you do not trust anybody in the Hawks...so, who do you go to when you need help?" PGR35, a former police officer, said:

SAPS does not view wildlife crime as a serious crime. SAPS are not at all equipped to protect rhino. They are not trained for it. If a policeman comes to a game reserve, he doesn't even want to get outside of the vehicle because there's a lion inside here. SAPS have also gone backwards in big strides in terms of skill, knowledge, and willingness of the guys to work. Forty-seven people get killed in South Africa a day versus two rhinos. Where's the priority? Also, the mistrust between the private rhino owner and the police; they don't want the police inside their reserve...we come from a very ugly background in terms of racism and there's still lots of deep wounds from both sides with lots of mistrust and corruption.

RANG12 explained that SAPS does not understand what conservation is: “I’ve taken a guy who has poached a duiker [antelope] to a police station and the policeman looks at me and he says, what’s the problem, it’s a small animal? What if it was a blue duiker and there’s only 20 left in the world? So, no concept of the reality or required responses when it comes to applying the law.”

### ***Non-Police Government***

Many respondents also asserted that trust was low and corruption was rife among the upper ranks of government. NGO40 said, “It came down to leadership...the fish rots from the head down. If the head of a park is not good...there’s no inspiration for the people lower down to go the extra mile.” VET33 noted, “The problem is a lack of trust and I don’t know how you get all of that while there is corruption in the system. But somehow, we need to start working toward better cooperation...but, I don’t know how to achieve this because the fundamental issue of trust, we can’t get over that hurdle.” NGO25 stated:

The [former] President and the President's son have been involved. The previous President's son is one of the head honchos of the ivory and rhino horn trade. The governor of the province and the heads of police are involved. We know of a .458 rifle that was stolen and sold in Mozambique. You only use a .458 to shoot rhino. The guys who bought it were the head of a village and the public prosecutor.

NGO53 explained:

The info will leak to the poachers because it goes to the Department of Environmental Affairs and it leaks from there. One guy wanted to dehorn his rhino...he went down, got the permit to dehorn the rhino. That weekend, they [rhino] were all killed...Guys within the office that issued the permits picked up the phone and said, 'this guy's got 7 rhino, and he's got no game guards. That's why he wants to dehorn them.'



Most respondents also cited a lack of trust in the ability of SANDF troops stationed primarily along the border of KNP and Mozambique to protect rhinoceros.

RANG12 said:

They [SANDF] ended up with another politicized organization and the guys were not up to the task. They simply don't have the discipline...definitely not committed to what conservation is. One of my rangers was shot by one of their soldiers. Another one of my rangers was shot by one of their policemen. Both those guys who shot are supposed to be special forces and both of them lost their cool in the situation and they didn't look, they just fired shots. I don't like or trust them at all.

VET16 reflected, "They [SANDF] are absolutely useless. They have got no training."

RANG21 said, "They don't want to go and save the rhino...They are just there

because it is a job for them." PGR19 explained:

They don't want to do it. It is not their job. I have seen it and I hear it from Kruger, and I know the front line there and they will tell you they are not having an effect as they don't want to be there. They are not familiar with the landscape, the threats, the dangers, the climate, the mozzies [mosquitoes], the lions, the elephants. They don't want to be there. They don't want to spend the night out in the freezing cold looking for a poacher. They are not interested in that. It is just wasting space and time.

Many respondents indicated that they perceived SANDF to be corrupt. For example,

PGR43 explained that bribery was widespread among SANDF:

Because they are a powerful force, armed, because they're on an international border, they're operating outside of the law that governs the police, the Criminal Procedures Act. They have a lot more latitude, so they can take bribes from both sides of the fence because if they don't, you're not coming in and you're not going out.

GOV48 was one of the few respondents who expressed trust in SANDF: "We have a very good working relationship with the South African Defence Force." In addition, NGO42 said, "I don't mistrust them in terms of their motives. I think their

intention is good.” RANG27 stated, “There is commitment from the government...if there are good leaders, then they [SANDF] will do the job they are told to do.”

GOV50 conveyed, “They are more conventionally trained. The bush savvy and the small tactics are lacking, so we utilize them more in a border control. In the long run strategically...shouldn’t the rangers [SANF] be separate from the anti-poaching?”

A few respondents also indicated low confidence in government conservation authorities and their ability to protect rhinoceros, whistleblowers, and informants. For example, NGO13 emphasized:

My confidence levels plummet dramatically when I start dealing with SAN [South African National] Parks. You’ve got a real problem over there because it’s rife with corruption and people don’t like to talk about it. I was in the park [KNP] last year and the week that I was at Skukuza, two rhinos were poached within less than two kilometers of the Skukuza camp area. Now, that should not be possible; it’s too close. Poachers would not go that close unless they were really confident that they wouldn’t get caught...that doesn’t happen without people covering for you. I’ve lost a lot of faith in SAN Parks.

GOV50 stated, “50% or 80%, it’s [corruption] gone up now. But there are corrupt rangers and it’s difficult to weed them out. We have a liberal democracy, so I can’t just investigate them.” GOV47 referenced government anti-poaching rangers, “I trust my guys, not all of them, but I know what to say to who, when, and how.”

Some respondents explained that whistleblowers and informants were also at risk. According to VET44:

I know they have an inherent mistrust for [government conservation authority]. I have had guys who I know and can be trusted phone me with good information. Then I have contacted my channels in the organization that I am supposed to. I had phone calls coming back to me to find out how I can get a hold of the informant. This particular individual [informant] phoned me and told me who he is. I can’t give it to them because I don’t trust them myself. I then went to the informant to say how you feel about speaking to this guy. Forget it.

Some respondents, however, had high trust in government authorities. For example, COMM6, a magistrate, emphasized that he had never experienced or heard of public officials conducting unethical or corrupt behavior within the context of the poaching of rhinoceros: “I have never heard about or experienced this. People must be trusted. People who are doing national duty or public duties must be honest people.”

### ***Private Anti-Poaching Rangers***

Most respondents had higher trust in private field rangers than they had in government rangers, although most indicated that corruption was always a possibility. GOV48 emphasized, “The rangers who are involuntarily converted into an anti-poaching unit are doing a seriously good job, but against all odds; against the rules of engagement, against what they were originally employed for...they are the thin green line.” NGO13 suggested, “You don’t do that job unless you’re committed to what it is; you don’t do it for the money...I have every confidence in them.”

Many respondents cited the use of polygraphs for rangers as important for trust. For example, PGR27 said, “We have all of our staff and polygraph test them...so we do trust our staff.” PGR45 explained:

Polygraphs are used and their routines are randomized. They work in small groups so the guys who work in the APUs [anti-poaching units] will not necessarily know each other before they get here. They don’t necessarily have a feel for rhino. If the Iraqi war offers them more money, they’ll go to Iraq. They are professional soldiers, so this is just a job for them.

COMM9 said, “If you are caught, you know that you are going to lose your job and you are going to be arrested because the company does not want you to put their name in the mud. So, that’s why private companies are good in terms of managing

their stuff.” VET44 expressed that private rangers were generally effective: “There is a section ranger who works the Mozambican border. He is law enforcement and has his own informers and he picks up good information regularly. He has got good success. Who does he work with? The private guys.”

Conversely, PGR27 offered, “I have seen our guys turn bad. People who have been well trained and skilled, good in the bush, because it is all lucrative.” COMM3 noted, “We’ve got rangers who are involved in game drives who know exactly where the rhinos are and they start giving information to people who might kill rhinos. Most of them are found that they either worked in the park as rangers or trackers.” GOV50 said, “You need guards to guard the guards.” COMM2 said, “The park management needs to scrutinize these people and rotate them to different locations all the time...give them a contract for five years, then you go. A renewable contract. Because if they get to know a place well then, they will do something bad, unethical behaviors.”

### ***Veterinarians***

Corruption among veterinarians was mentioned by several respondents in relation to incidents involving the illegal distribution of the controlled drug, etorphine (M99), by veterinarians to poachers for use when darting rhinoceros. For example, NGO28 said, “We have also got the vets, the rangers, and the police; they are all poachers because they all participate in killing those animals. The vets are involved because you can’t get hold of M99 over the counter. It is a scheduled drug.” One veterinarian (VET44) said of corruption among veterinary professionals involved in

poaching, “I am absolutely disgusted. What are they teaching vets at university? Where are the ethics? I don’t want to take my dog to a vet. Who can I trust?”

### ***Rhinoceros-related NGOs***

Many respondents suggested that NGOs should be registered in a centralized database and be transparent. These respondents were concerned about the lack of transparency and donations not being applied to rhinoceros (e.g., donations going to overhead and personal expenses, but not going toward rhinoceros conservation). For example, VET44 stated:

People give away money and it disappears. They never hear back. One of the most difficult ones to handle is when money is being donated for intelligence gathering. There is nothing tangible that you can get. You are not even getting a receipt back for your money. So much is based on trust.

NGO28 said, “There are certain NGOs that I don’t want to work with or even look at or speak to because they are so corrupt.” NGO25 explained of one NGO:

The guy who took over the operation said to me, ‘well, but I’ve got costs.’ I said, ‘what costs?’ ‘Well I have my kids at school.’ I said, ‘I don’t understand this. So, you are covering all your living expenses before you say at the end of the month ‘well geez, there’s three grand left over, let me donate it to somebody?’ He said ‘yeah.’ Now, that’s just ludicrous.

Similarly, NGO53 stated, “There's this woman who runs [NGO]. And, she's got a lease of some land and like six rhino on the land, and she raises millions. But, it's to support her lifestyle...and people think they're saving rhino.”

### **Punishment**

The third research question addressed stakeholder perceptions about punishments for poachers and these perceptions rarely differed among stakeholder groups. Many stakeholders, including community members, believed that more field rangers, or ‘boots on the ground,’ were needed to see a deterrence effect. For

example, GOV32 stated, “you have to have more well-trained rangers on the ground with boots...technology will not replace that.” However, concerns among respondents who did not support a militarized approach included questions about long-term sustainability, social and economic ramifications, and potential rifts with communities. NGO51 stated, “This is not a war that is going to be won by some military means, by gun battles in the bush.” PGR45 surmised that militarization “will affect the wilderness open space attraction that this place has for people and that might turn people away.”

Some stakeholders from government and private game reserves expressed enthusiasm for the promise of pursuits into Mozambique, in which South African law enforcement is permitted to pursue suspected poachers across the border without official permission. For example, PGR45 said that, “You don’t get six rhino and keep tracking...You hit and run. But, that could change with the hot pursuit...these guys will chase them straight back into the huts, into Mozambique. And those guys will say ‘it’s become too hard of a target; we’ll go somewhere else.’”

Most respondents believed that penalties for poaching rhinoceros were sufficient. Only one respondent specifically mentioned monetary penalties, as GOV32 stated, “In South Africa, they are appropriate. Mozambique...you get convicted and you’re given a fine, the guy doesn’t even pay the fine and they don’t even follow up, so then you begin to worry where’s the deterrent?” Most respondents, however, argued that although penalties were sufficient, arrest and conviction rates were poor, so risk and deterrence were low for poachers. NGO51 said, “Some cases, the courts can be excessively heavy handed. It sends a message, but you are dealing

with people who are enticed by huge amounts of money...you can see that the deterrent effect is very low.” GOV32 argued, “You’ve got an 80% prosecution rate, but if you take two or three of the cases to court and you win two of those...okay good prosecution rate. But what about the rest below that you actually haven’t done anything with?”

PGR19 was among the few respondents who did not believe penalties were sufficient:

We hear regularly about people being fined inappropriate amounts of money and out again and coming to poach again the next day or in a weeks’ time...it actually forces people to take the law into their own hands...People will start talking about shooting people and they will start doing it. It should be a sufficient deterrent...jail time, 20 years.

Likewise, RANG21 expressed:

You have no understanding what efforts, resources, money went into this investigation and to catching these people. I had to pay an informer, who was risking his life...There are traveling costs, my time, I involved some of the community members, I involved anti-poaching guards...When we caught them, it was bringing them into the police station for interrogation. Thousands and thousands and thousands of Rand [South African currency] went into this, and they get released on three thousand Rand for an unlicensed firearm, ammunition, and the intent to kill an endangered animal.

COMM2 also believed that penalties should be higher: “They are a bit weak... currently people get away with it by paying big fines by paying bails. I think you should be sentenced not less than 25 years.” Some respondents also believed that jailing Level 1 poachers (i.e., first of five levels in the illegal supply chain consisting of small teams of poachers who enter protected areas and kill rhinoceros) would not affect poaching. For example, VET33 argued, “If you remove a poacher and he

spends 20 years or whatever, it means nothing because you are just creating a vacuum for the other guys wanting to take his place.”

A few respondents, primarily NGOs, felt that even harsher penalties were needed. These respondents suggested that shoot-to-kill policies would give rangers considerable protection against prosecution if they shoot a poacher, yet they acknowledged that it could lead to innocent people being killed. For example, NGO28 explained:

Those guys go through hell when they shoot and kill a poacher. They have to go through the whole criminal procedure act because they do get charged. Nobody wants to be in a position like that. For the rangers, it would make it easier for them so they don't have to shoot in self-defense. But, innocent people could get killed. A couple incidences that have happened have been pronounced friendly fire, but we know that it was actually poaching; that wasn't friendly fire, it was rangers and police. When you sit down and you look at the whole bigger picture and the legalities and constitution, it could be tourists for instance.

COMM1 said, “It is not good...a week, a month, those people are out from jail. Must be tougher, must! Because they have killed the rhino, they must at least, I don't know, maybe, a death penalty.” Some respondents stressed that stronger disruption of syndicate leaders was also needed. For example, GOV46 argued, “Everybody says ‘shoot the poachers,’ but it should be ‘shoot the syndicates.’ They are the real, real bad people.”

Most respondents suggested that poachers could, in theory, be rehabilitated. However, respondents thought this was unlikely to happen. When asked if poachers could be rehabilitated, NGO51 stated, “Our jails don't rehabilitate people at all...In South Africa, it is a brutal and barbaric setup. Our prisons are badly run...overcrowded...corrupt. If you send someone to prison, they are more likely to come out an ‘it’ criminal than when they went in.” RANG12 said, “You go into an



African jail anywhere it's like a death sentence. Most people don't come out of there. When they do come out of there, they are more criminalized to what they are reformed because there's virtually no control." RANG45 emphasized, "The only way a rhino poacher will be cured is if he is in Kruger [KNP] poaching with his brother or his cousin and one of them gets killed and he gets away. And he's like, 'It's not worth it.'" Several respondents stated that rehabilitation is not a consideration because the money from the poaching of rhinoceros is too high for a potential poacher to choose not to poach in most cases. For example, RANG43 said, "If you can solve his socio-economic problems, not only his, but his whole family's, then I think you stand a chance at rehabilitating him, but I don't see how the state can solve his socio-economic problems...what are they going to do, give him more money than he would get from rhino poaching?"

Conversely, a few respondents argued that it is possible to rehabilitate poachers. For example, GOV50 exclaimed: "Yes! They [poachers] make the best rangers." RANG12 added:

Can you take a poacher and turn him to become a good field ranger? 50/50, I have been successful in some cases and extremely unsuccessful in other cases. It's possible, especially if you can get him back and educate him properly. A destitute individual I can still change because he was just looking for any means to survive.

## **Discussion**

These findings built on previous studies that often viewed corruption, trust, and punishment in isolation, and they also considered the perceptions of multiple stakeholder groups regarding the roles of these concepts in the context of the poaching of rhinoceros. One major finding was that police corruption was most often

highlighted by respondents, with most believing that corruption was pervasive within SAPS. Police corruption has received significant attention in the criminology literature, which has suggested that it contributes to organized crime in South Africa (e.g., Mothibi, Roelofse, & Maluleke, 2015). Police corruption can manifest through a variety of practices, ranging from street level bribery and bureaucratic corruption to collusion with organized crime syndicates and political corruption (e.g., Chêne, 2010). Most stakeholders in this study perceived the police in South Africa to be corrupt, which is consistent with Mattes (2006) who found that at least half of the South African population perceived police in the country to be corrupt. Some respondents also indicated that SAPS employed police officers with criminal backgrounds. This is supported by Rademeyer and Wilkinson (2014) who revealed that 1,448 SAPS officers ranking from a major-general to warrant officers were convicted criminals. Newham (2002) reported that efforts at police reform involved a selection system that included an absence of a criminal record, but this appears to have failed.

Respondents indicated that bribery and collusion were among the most common acts of corruption. According to the World Values Survey (WVS; Inglehart et al., 2009), only 34% of South Africans indicated that accepting a bribe in the course of their duties is “never justifiable,” whereas the majority (65%) fell somewhere else on the scale between “always” and “never justifiable.” Peiffer et al. (2019) found when anti-corruption initiatives were undertaken in several South African provinces between 2011 and 2015, bribery related to police decreased, scrutiny was higher, and perceptions of corruption in SAPS dropped.

Perceptions of corruption are strong predictors of distrust in SAPS (Frey, 2013). Distrust in law enforcement authorities compromises their ability to apply the law with legitimacy and has important implications for building relationships and information-sharing, managing conflicts, conducting outreach activities, and ensuring local support for conservation (Bennett et al, 2019). Consistent with findings from other studies (e.g., Mothibi et al., 2015), respondents overwhelmingly distrusted SAPS to adequately investigate and handle crimes against wildlife, but a few indicated trust in specialized police units. Respondents attributed this distrust to SAPS being corrupt, apathetic, and unqualified when handling wildlife crimes. Respondents held negative perceptions on various dimensions of trust (e.g., integrity, competency) in SAPS.

Similar to other studies (e.g., Bello, 2018), many respondents suggested that corruption was pervasive not only in the context of rhinoceros poaching, but also within South African society as a whole. All respondents stated that corruption was a serious problem that had increased, with most suggesting that fixing it needed to be the highest priority. Respondents also held negative perceptions of corruption associated with poaching and conservation of rhinoceros. South Africa received a low score of 44 on the Transparency International's Corruption Perception Index in 2019, which ranks the perceived levels of public sector corruption among 180 countries on a scale of zero (highly corrupt) to 100 (no corruption). Countries with scores below 50 are perceived as corrupt.

Marquette and Peiffer (2015) recommended that transformational change in a nation with pervasive corruption needs a collective and coordinated effort with

enough capacity and political will to make a difference. This resembles a collective action problem because it cannot be assumed that there would be enough agents willing to hold corrupt actors accountable and enforce laws and reforms, as ultimately, they may also be corrupt. There has been little agreement in the literature on what constitutes best practices and anti-corruption policies. In addition, few studies focus on how to: (a) bring integrity to authorities tasked with addressing poaching and trafficking crimes, (b) fight corruption within their ranks, and (c) build trust and compliance within the confines of a systemically corrupt country (e.g., Persson, Rothstein, & Teorell, 2013). One popular view is that strategies must be adapted to the specific environment of the area in focus. From a collective action perspective, researchers have pointed to a need for a massive reform of the political, economic, and social institutions to shift expectations of other actors from being corrupt to non-corrupt. Although this significant challenge has been mentioned in recent studies, the “how” of it has yet to be identified (Tacconi & Williams, 2020).

Persson et al. (2013) suggested that collective action theory also predicts that whistleblowing in a systemically corrupt country holds great personal risk and little in the way of benefits. Informants and whistleblowers are one important line of defense against poaching and for uncovering corruption (O’Grady, 2020). Due to the secretive and sophisticated nature of wildlife crime and syndicates, detection and prosecution of these underground networks is challenging without insider knowledge provided by whistleblowers (National Whistleblower Center, 2019). Whistleblowers are a crucial source of information for combatting wildlife trafficking. Respondents indicated there was great concern for the safety of individuals who came forth to authorities with

information about poaching of rhinoceros. They indicated that the pressure by corrupt police to reveal identities of confidential informants put informants at risk.

Unless whistleblowing opportunities and safeguards are enhanced, potential sources may not be motivated to share information out of fear for their personal safety. Best practices to increase trust in local agencies and authorities include ensuring that incentives (e.g., mandatory monetary rewards) are fair and timely, and the identities of whistleblowers remain confidential (Efrati, Malleck, & Gardner, 2019). Confidentiality of a whistleblower's identity should also extend toward other agents and agencies involved in the case. Incentivizing whistleblowers to report original information related to wildlife crimes is an important tool that can help rangers and law enforcement successfully apprehend offenders and prosecute cases.

South Africa is a low-trust society (Mmotlane, Struwig, & Roberts, 2010). According to the WVS, 76% of South Africans had low social trust in dealing with people in general (Inglehart et al., 2014). The WVS indicated that its South African respondents were polarized in their confidence in the armed forces (SANDF), police (SAPS), and the courts, with half indicating they had confidence in these agencies and the other half having little or no confidence. Somewhat contrary to the WVS, results presented here showed that stakeholders had low trust in SANDF to protect rhinoceros. The perception that SANDF lacked ability, competency, and consistency was due to respondent perceptions that SANDF showed a lack of aptitude and interest in the job, and they were not trained for anti-poaching operations.

Contrary to the low trust expressed for SANDF and public rangers, most respondents expressed moderate to high trust in private field rangers, citing their job

passion, confidence in polygraph tests or background checks to screen employees, and sharing information on a 'need-to-know' basis. Perceptions of competency and integrity, both important dimensions of trustworthiness (Coleman & Stern, 2018), drove positive perceptions about private rangers.

NGOs also play an essential role in rhinoceros conservation, as they conduct research to inform policy development, build institutional capacity, and facilitate independent dialogue with civil society (Jordan & van Tuijl, 2012). Trust is important for NGOs because they rely on donors for financial support. However, respondents expressed distrust in some NGOs, as they were perceived to lack openness and transparency, which are important dimensions of trust (Grimmelikhuijsen, Porumbescu, Hong, & Im, 2013). These results are supported by other reports suggesting that NGOs are facing a crisis of credibility and trustworthiness (e.g., Keating & Thrandardottir, 2016). NGO accountability, or the means by which an organization reports to authorities and is held responsible for its actions, has received significant attention in the past decade (e.g., Edwards & Hulme, 1996). According to Ebrahim (2003), NGOs focusing on issues, such as those related to rhinoceros, should address mechanisms for accountability, including being held responsible to external actors and standards, and taking responsibility for actions.

Another important finding was that most respondents stated that punishments were sufficient for poachers of rhinoceros. This contradicts numerous reports that call for stiffer penalties for convicted poachers of rhinoceros (e.g., Hance, 2015; Mogoshi, 2016). A few stakeholders believed that penalties were too extreme for convicted poachers, whereas some others recommended that penalties for poaching rhinoceros

be set to an average standard of 20 years of incarceration. The National Environmental Management Biodiversity Act (NEMBA) of 2004 specifies that a convicted poacher of rhinoceros is subject to fines from 100,000 Rand up to three times the value of the animal and / or up to five years in prison, although this has varied (Republic of South Africa, 2004). More recently (in 2019), more than 50% of convicted poachers and traffickers of rhinoceros were sentenced to just two to five years of imprisonment and only 4% of those convicted were sentenced to 15 or more years (DEA, 2020b). In one of these cases, three people convicted of poaching more than a dozen rhinoceros each received a 25-year sentence. In another case, a Thai national and key player of an international rhinoceros horn smuggling ring had a 40-year sentence reduced to 13 years. Perspectives on punishment are important for trust, as trust may increase when offenders viewed as deserving of punishment are given a moderate or large punishment, but trust may decline if punishment is perceived as non-existent, too light, or too extreme for the crime (Wang & Murnighan, 2017). This suggests that respondents who believed that punishments were sufficient may exhibit more trust in the judiciary system. However, respondents acknowledged the low arrest and conviction rates of poachers, which may be perceived as non-existent punishment, potentially muting any effects of perceived appropriate punishment for convicted poachers on trust.

A few respondents also acknowledged their support for shoot-to-kill policies and stricter punishment for convicted poachers. When shoot-to-kill policies were enacted in Zimbabwe in the 1980s and in Botswana in 2013, they were effective deterrents and reduced poaching of rhinoceros more than other policies (Mogomotsi

& Madigele, 2017). However, these policies were met with criticism for violating human rights and creating tension with neighboring nations (Mongudhi, Konopo, & Ntibinyane, 2016).

A study by TRAFFIC (Weru, 2016) found that high minimum penalties for convicted poachers of wildlife in Kenya resulted in an increase in ‘not guilty’ pleas and an increase in the number of trials. With no incentive to plead guilty, a high minimum penalty does not distinguish among the severity of crimes and may be perceived as unfair to some. For example, a minimum penalty may not treat an individual who has poached one animal differently from a poaching boss or syndicate who has in their possession hundreds of horns or has administrative roles in directing a criminal organization. This system could ultimately lead to more corruption. It has been argued that increasing the severity of penalties does not result in a corresponding increase in deterrence (Wilson & Boratto, 2020). Rather, increasing the certainty of arrest and punishment does result in a deterrence effect. This contrasts with the notion that severe minimum penalties could act as an effective deterrent alone, and mirrors the success that Nepal had in reducing poaching through certainty of applying penalties for wildlife crimes (incarceration up to 15 years and fines up to \$1,149 USD), enforcement, and straightforward and frequent prosecutions that are supported by the courts (Martin, Martin, & Vigne, 2013).

Consistent with other studies (e.g., Nanima, 2016), most respondents thought that penalties were sufficient, but arrests and convictions were insufficient. This finding is important in the context of punishment because to deter criminal activity, prosecution and convictions of crimes must be reliable (Kugler, Verdier, & Zenou,



2003). Most individuals arrested in connection with crimes against rhinoceros are low-level poachers, not mid or high-level traffickers or syndicates. There are also lengthy delays between poaching acts and the conclusion of most trials. In 2019, for example, eight high-profile cases were still on the court roll in South Africa (DEA, 2020b). One such notorious case is for Dawie Groenwald who was arrested in 2010 along with 10 others for their involvement in illegal hunting, money laundering, fraud, and rhinoceros horn crimes. Despite an indictment that includes almost 1,900 charges against the group, the case has been continuously postponed and has not been to trial.

Most respondents also believed that rehabilitation of rhinoceros poachers was possible, but unlikely to happen due to the high payoff from poaching coupled with few sustainable economic alternatives and lack of successful programs aimed at rehabilitation in the prison system. A few respondents said that former poachers could be rehabilitated and subsequently make good anti-poaching rangers. Convicted wildlife poachers in other regions have been successfully reformed following incarceration, as have those who were not incarcerated, through offering opportunities for alternative sustainable sources of livelihood and appropriate skills training (e.g., ecotourism, local farming initiatives; Basu, 2018; Uwimana, 2019). Consistent with previous studies, results here indicated that there is an urgent need for viable economic alternatives for poachers of rhinoceros in South Africa, and a renewed focus on rehabilitation efforts within correctional institutions (e.g., Hübschle, 2017).

In conclusion, this article sheds light on the importance of corruption, trust, and punishment as three concepts that may improve understanding of why anti-

poaching initiatives have failed to drastically reduce poaching of rhinoceros. These concepts represent some of the most serious obstacles to disrupting this poaching in South Africa, and they are crucial to the functioning of agencies and societies in tackling wildlife crimes. Punishment was considered adequate, which can reflect higher trust, but this effect may be lessened by the low arrest and conviction rates for poachers. Low trust and high levels of perceived systemic corruption in entities tasked with protecting rhinoceros undermine the conservation and policing communities.

Future research can build on the results presented here in a couple of ways. First, a few respondents indicated that they could not share too much sensitive information due to perceived security concerns, leading to a potential response bias. Despite this, the sample size was ample for a qualitative study to depict responses from a variety of stakeholder groups (e.g., Boddy, 2016; Malterud, Siersma, & Guassora, 2016), and respondents were generally eager to provide their insights and opinions under the agreement of confidentiality. Second, this study was exploratory and provided insights from some stakeholders who are directly impacted by the rhinoceros poaching situation in South Africa. These results, however, are limited to a purposive sample of respondents in a subset of provinces and may not generalize to other people and locations. The applicability of these findings to other groups, countries, and South African provinces impacted by the poaching of rhinoceros represents a topic for additional empirical investigation.

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## **CHAPTER 4 - STAKEHOLDER PERCEPTIONS OF RISK ASSOCIATED WITH THE POACHING OF RHINOCEROS IN SOUTH AFRICA**

### **Introduction**

Conflicts between humans and wildlife put wildlife persistence and human livelihoods at risk (e.g., Kahler & Gore, 2015). The rhinoceros is one of many wildlife species that has experienced conflicts with humans. Globally, rhinoceros have been poached to precariously low numbers for their horns to be used as investment commodities, status symbols, and Traditional Asian Medicine (UNODC, 2020). South Africa has 75% of the world's wild rhinoceros population and 85% of this species' recorded poaching incidents since 2006 (UNODC, 2020).

The risks of adverse interactions between poachers and stakeholders who strive to protect rhinoceros influence behavior and decision-making. In 2017, for example, poachers breached a rhinoceros orphanage, killing juvenile rhinoceroses and attacking staff members, including sexually assaulting one member (Burleigh, 2017). In 2020, a police commander in charge of an organized crime and rhinoceros poaching investigation unit was killed by a suspected member of an organized crime group after being threatened and assaulted for years (Calitz, 2020). South Africa's Kruger National Park (KNP) is the epicenter of this poaching where up to 200 suspected poachers of rhinoceros were killed by rangers between 2011 and 2016 (Shaw & Rademeyer, 2016). In 2009, a wildlife veterinarian near KNP was killed by poachers.

These risks are not limited to South Africa or to poachers of rhinoceros, as they happen with other species (e.g., elephants) and in other countries where wildlife

crime occurs (e.g., Botswana, India). In the last decade, for example, more than 1,000 park rangers globally have been killed in the line of duty, with more than 600 killed by poachers of wildlife (IRF, 2019). Given that poachers often reside in communities near protected areas, it is not surprising that The World Wildlife Fund (WWF) reported that more than 50% of field rangers surveyed in Africa believe these community members view rangers as enemies, and almost two-thirds believe these community members do not respect rangers (Belecky, Singh, & Moreto, 2019).

Rangers are agents who are responsible for conducting conservation monitoring and protecting and preserving species of flora and fauna and their environments (Kuiper et al., 2020). However, in response to the poaching of wildlife species, such as rhinoceroses and elephants, conservation responsibilities traditionally held by rangers have been increasingly replaced with surveillance and enforcement, as conservation has become more militarized (Lunstrum, 2014). Militarization of conservation (i.e., “green militarization”) is a response by authorities that includes paramilitary training for rangers and their use of military equipment and tactics to tackle threats such as wildlife crime (Jooste & Ferreira, 2018). Rangers in South Africa, for example, are permitted to discharge weapons only in self-defense, whereas other countries have shoot-to-kill policies (e.g., Botswana). In addition to risks associated with personal danger, rangers also experience other stressors such as low wages, harsh working conditions, isolation, compassion fatigue and burnout, the threat of arrest, community ostracization, and social and psychological impacts resulting from poacher fatalities in combat (e.g., O’Grady, 2020). Other stakeholders involved with rhinoceros (e.g., veterinarians, private rhinoceros owners, parks and

game reserve personnel) also face personal risks. The poaching of rhinoceros is syndicated with risks at the individual, community, and societal levels where effects such as violence and corruption occur.

Understanding how stakeholders perceive the risks of both poaching rhinoceros and engaging in the protection and conservation of this species is important for informing decision-making and developing support programs that provide active preventative measures and interventions for job-related stress, trauma, and burnout (e.g., Norton, Johnson & Woods, 2019). Perceived risk is defined as the extent that an individual believes they may be exposed to a threat or hazard, and this risk may increase as the probability of a negative event escalates or as the expected negative consequence worsens (Sjöberg, 1999). This article focused on perceived risks of stakeholders within the context of the poaching of rhinoceros by examining their perceptions of risks associated with working and living on the front lines of this conflict.

## **Conceptual Background**

### **Perceptions of Risk Associated with Poaching**

Perceived risk involves an individual's subjective judgment of both the probability that they believe they are personally vulnerable to harm and the severity of consequences (Needham, Vaske, & Petit, 2017; Requier, Fournier, & Darrouzet, 2020; Slovic, 2010). People experience vulnerability to threats differently, and perceptions of risk and control that an individual has over these threats can vary widely among individuals partly because of different social, cultural, and contextual factors (e.g., cultural theory of risk; Rizzolo, Gore, Ratimbazafy, & Rajaonson,

2017). Evaluations of risk are influenced by numerous societal and environmental factors, such as demographic characteristics, ability, origin of the risk, awareness through information exposure and media interest placed on the risk, and actual or perceived benefits (van Eeden, Slagle, Crowther, Dickman, & Newsome, 2020). Other important elements that can increase or mitigate perceptions of risk include voluntary versus involuntary exposure to the hazard, familiarity or experiences with the risk versus a novel risk, visibility of the threat, dread, scope of the risk (e.g., acute disastrous risk versus long-term risk), specificity of the risk (e.g., identification of victims as anonymous versus made public), and trust or confidence in those managing the hazard, especially when individuals have little personal control over the hazard (Cori, Bianchi, Cadum, & Anthonj, 2020; Ropeik, 2002; Slovic, Peters, Finucane, & MacGregor, 2005). These factors impacting risk perceptions can occur simultaneously. Some individuals are more risk sensitive and rate all potential risks as high (Needham et al., 2017). Conversely, other individuals may engage in risk denial or believe they have more control than others in protecting themselves from harm, thus perceiving personal risks to be lower than the same risks to others (Sjöberg, 2000).

Studies have examined risk perceptions in various contexts, including human interactions with wildlife (e.g., Allen, 2019; Brown, Frankham, Bond, Stuart, Johnson, & Ueland, 2020; Kahler, Liu, Herbst, & Gore, 2020; Kushnir & Packer, 2019; Needham et al., 2017; Philavong et al., 2020), police (Trinkner, Kerrison, & Goff, 2019), tourism (e.g., Adeloye & Brown, 2018), and crime (e.g., Krulichová, 2019). Singh et al. (2020), for example, examined wildlife rangers' perceptions of



risks associated with their working conditions and found that most African rangers perceived personal risks. The WWF reported that one in seven wildlife rangers in Asia and Africa have been seriously injured on the job and more than 80% believed their job was dangerous (Belecky et al., 2019; Davis, 2018). In Africa, more than 80% of rangers have faced a life-threatening situation in the line of duty, compared to more than 60% in Asia (Martin, 2019).

Information about stakeholder perceptions of risks associated with the poaching of rhinoceros can improve understanding about how these risks affect subsequent cognitions and behaviors. Perceived risk of personal harm from poachers, for example, can be related to support for lethal (shoot-on-sight) or non-lethal punishment of poachers and aid in predicting compliance and responses to policies. In addition, understanding these risk perceptions can inform better preparation and improved responses to threats. Perceptions of risks to the public from the poaching of rhinoceros can also inform interventions intended to influence public behavior (e.g., risk communication) and reduce potential risks to members of the public, including tourists who visit areas where contact with poachers may occur (e.g., parks, other protected areas). Tourism in Africa's protected areas is perceived to be riskier than in many other regions due to factors such as crime (e.g., poaching), health risks (e.g., malaria), and political, social, and economic instability (Lepp, Gibson, & Lane, 2011). Despite this, wildlife and safari-based tourism provides many jobs and is an important economic driver for many African countries, including South Africa where it contributes nearly 3% of its gross domestic product (GDP; Sello, 2020).

## **Perceptions of Risks Associated with the Militarization of Conservation**

Risks to the survival of rhinoceros as a species in South Africa due to poaching have resulted in various interventions to curb poaching escalation and establish rhinoceros populations in safe areas (i.e., biological management). These interventions include the transition to military and para-military techniques and tactical approaches through efforts of security forces, including law enforcement (e.g., South African Police Services [SAPS]), military (e.g., South African National Defence Force [SANDF]), and anti-poaching personnel (e.g., field rangers). This form of green militarization has been implemented in many of Africa's countries and protected areas, and has been part of conservation on this continent since colonial times (Marijnen & Verweijen, 2016).

Despite its long history in conservation, this green militarization is a highly contentious topic. Opponents have critiqued militarized approaches, pointing to alienation of communities near protected areas, normalizing exclusion, human rights violations of suspected poachers, environmental damage, and suggesting that it is little more than a band-aid for a complex issue and does not address underlying causes of poaching (e.g., Duffy et al., 2019). Proponents have pointed to the right to self-defense and its preventative rather than reactive characteristics, and have suggested that neutralizing poachers is necessary to disrupt organized crime and protect species from extinction at the hands of poachers in a 'just war' (e.g., Mogomotsi & Madigele, 2017). Proponents have also argued that confusion surrounds the concept of militarization, with critics calling tactics such as advanced

surveillance and intelligence gathering ‘militarization’ when these techniques are not, in fact, exclusive to only the military (e.g., McCann, 2017).

Although there is no official shoot-on-sight policy for neutralizing poachers in South Africa, responses that utilize tactics and technologies developed by the military can result in the use of lethal force by rangers to protect both themselves and rhinoceroses from poachers. Substantial attention on the militarization of conservation has focused on the impacts of violent encounters on poachers with little attention given to the risks and impacts on the front line stakeholders who aim to protect species (e.g., Mushonga, 2020). Violent engagements and attacks occur between armed poachers and armed rangers, which may result in injury or death to poachers and rangers alike. When rangers kill poachers in South Africa, rangers are typically arrested for murder. In addition to the risks of personal bodily harm and arrest, rangers and other stakeholders on the front lines are also repeatedly witness to the violence carried out against the animals they spend their careers trying to protect. In addition to traumas actually experienced by stakeholders, these events can also result in psychiatric risks such as acute stress disorders (e.g., combat stress), post-traumatic stress disorder (PTSD), burnout fatigue, depressive disorders, and substance use (e.g., Hoge, 2010; Kunst & Zwirs, 2014). The capacity for these individuals to concentrate may be impaired and they may live in a state of persistent anxiety and chronic fear. Conversely, some stakeholders may display resilience despite enduring high risk and chronic stress, or following adversity or prolonged or severe trauma (Iacoviello & Charney, 2014).

## Objectives and Research Questions

Some studies on militarization in protected areas have examined the experiences and impacts of this militarized conservation on rangers and other personnel on the front lines of wildlife poaching (e.g., Annecke & Masubelele, 2016; Lunstrum, 2014; Massé, 2020; Mushonga & Matose, 2020). These studies have highlighted negative impacts of militarization in socio-ecological systems, including the impact of weaponry on biodiversity conservation, eviction of communities from protected areas, and human rights abuses. Limited research, however, has examined the perceptions of risks associated with poaching that are held by a greater number and diversity of stakeholders. The objectives of this article were to: (a) assess a broad range of risk perceptions associated with the poaching of rhinoceros in protected areas in South Africa, and (b) gain a comprehensive understanding of risks perceived by numerous stakeholder groups. This article builds on previous research by exploring two specific research questions. First, how do stakeholders experience and perceive personal risks *to themselves* as a result of their involvement in rhinoceros conservation activities, and to what extent do these risks differ among various stakeholder groups? Second, what are their perceptions of risk (associated with the poaching of rhinoceros) *to other members of the public*, and how do these risks differ among stakeholders?

## Methods

Data were collected from stakeholders between June and August 2014 across six provinces in South Africa (Gauteng, Limpopo, Mpumalanga, KwaZulu Natal, Eastern Cape, Western Cape). KNP and its neighboring game reserves were also

selected as part of the study area based on past, current, and potential future problems associated with the poaching of rhinoceros. Communities and private reserves along KNP's western boundary within approximately a 20 km (12.4 mi) distance from the KNP boundary were also sampled. Agencies and nongovernmental organizations (NGOs) in South Africa that have demonstrated an interest in the issues of poaching and conservation of rhinoceros were also sampled.

The sample was obtained from a combination of purposive and snowball (i.e., chain referral or respondent-driven) sampling (Bernard, 2012). Fifty-four in-person, semi-structured interviews (Robson, 1993) were conducted across seven stakeholder groups: private game reserve personnel ( $n = 10$ ), government personnel ( $n = 15$ ), NGO personnel ( $n = 12$ ), wildlife veterinarians ( $n = 4$ ), community members ( $n = 6$ ), private field rangers ( $n = 5$ ), and tour operators ( $n = 2$ ). Interviews were audio-recorded, transcribed verbatim, and analyzed. More than 142 hours of interviews with a mean length of 158 minutes each were recorded. The semi-structured interview schedule and set of questions was pretested to ensure that questions were understood. Interviews were conducted in English when possible. Four community members, however, did not speak English, so their interviews were conducted with the help of a local research assistant who translated. Detailed notes were written during the interview for one participant who declined to being recorded. With this number of interviews (i.e., 54), the qualitative data were reaching saturation with limited new information or themes observed in the interviews conducted near the end of the data collection period.

Perceptions of risk were assessed by asking stakeholders questions such as “what personal risks, if any, do you face or experience resulting from your exposure or involvement with rhinoceros conservation;” “do you think organized criminal syndicates and groups involved in the poaching of rhinoceros are fueling fear and intimidating local residents, and what are your thoughts on the roles played by these syndicates;” and “what impacts, if any, do you think the poaching of rhinoceros has on South African society” (see Appendix)?

To identify patterns and links among responses, MS Word and NVivo®, a qualitative data analysis software, were used for organizing data and developing a coding scheme (Miles & Huberman, 1994; Strauss & Corbin, 1998). Differences in responses among stakeholder groups were assessed to indicate where any divergence in responses occurred. To ensure confidentiality, participants were given pseudonyms that identify the stakeholder group to which they belonged along with an interview number (COMM = community member, GVT = government personnel, NGO = non-governmental organization personnel, PGR = private game reserve personnel, RANG = private field ranger, TOUR = tour operator, VET = wildlife veterinarian).

To measure intercoder reliability and agreement, a research assistant was recruited and trained. Intercoder reliability assesses the degree that coding of interview text by multiple coders is similar to reduce bias in interpretation, as coders may differ in their interpretation of the text’s content and themes (Hruschka et al., 2004). Twenty (37%) randomly selected, full-length interview transcripts were coded separately by both the assistant and the lead researcher (Hodson, 1999). Results were compared and discrepancies in coding were reconciled using a negotiated agreement

approach between the researcher and assistant (e.g., Campbell, Quincy, Osserman, & Pedersen, 2013). Following the rationale of Campbell et al. (2013), the percentage of agreement was deemed the most appropriate calculation for intercoder reliability. An initial intercoder reliability of 86% was achieved, with 98% intercoder agreement after the negotiations.

## **Results**

Based on these analyses, two major themes were revealed: (a) perceived personal risks, and (b) perceived risks to the broader public. There were also multiple sub-themes within each of these two primary themes. Contextually relevant quotations were selected to illustrate assertions and show nuances. Themes and subthemes were organized from those most frequently mentioned by respondents to those least often mentioned. There were only a few differences in these perceived risks among the seven stakeholder groups.

### **Perceived Personal Risks**

The first research question focused on how stakeholders experience and perceive personal risks to themselves as a result of carrying out their professional activities. All respondents indicated that the risk of being victims of violent crime in general in South Africa was extremely high. For example, PGR27 explained, “I woke up in my house with three guys on top of me and my wife. They beat us; fortunately they didn’t kill us. Crime here is just ridiculous and out of control.” VET16 said, “In this continent, not just this country, life is cheap, whether it be human, animals, anything. Rhino is a commodity, it is meat.”

### *Risk from Poachers and Syndicates*

Most respondents also indicated that there was a high risk in the form of physical danger to stakeholders working on the front lines of the rhinoceros poaching issue. For example, NGO41 emphasized, “I don't want people to hide away from the fact that this is a war. There is no nice thing about this situation. It's horrible, ruthless, cruel. Everything you think of in your worst movie...it's happening. People are getting killed and murdered around the situation.” In fact, during data collection, an interview with a head warden of a renowned private game reserve was cancelled after three suspected poachers of rhinoceros entered the home of the warden and his wife, in search of rhinoceros horns and weapons. During the nighttime attack, the poachers attacked and stabbed the warden and his wife, and were apprehended with stolen firearms after they fled the scene. Many respondents expressed trepidation in their subsequent interviews, as they were aware of this attack. RAND35 explained:

We've had several matters where syndicates approached...they see a person wearing a uniform of a reserve and they would approach them and say, 'I'll give you 10,000 Rand [South African currency], do you know where the owner keeps his horn?' In one of the robberies we had here, it was intimidation because it was an armed robber and he approached a guy who worked for us and his other family member worked at another reserve. They said, 'show us how we can get to the horn or you know we know where your family lives.'

Stakeholders also discussed anti-poaching risks. PGR27, for example, stated, “On several occasions we get close to the poachers and they simply creep into the bush. In that kind of thicket, you lose tracks and going into the bush is very dangerous because they can see you, but you can't see them.” Likewise, NGO13 said:

I do anti-poaching patrols here and during the full moon it's frightening. Fence patrols during the full moon are generally done by one person because you're using the rest of the manpower to do the foot patrols through the reserve. And, not getting a lot of sleep for a week, it's hard. I share that worry when I drive



fence lines because you kind of know...if you bump heads with some poachers it's probably going to be bad.

NGO25 emphasized, "You're in a situation where you've got crimes being committed...the potential for that poaching team to shoot a ranger, deliberately in cold blood, is very real. If they run into him, they're going to shoot him." RANG21 suggested that risk will increase as poacher tactics change:

They are going to start booby-trapping the carcasses. We had an incident here where they shot the rhino, they hid in the bush, and they just sat and watched the carcass and waited for the anti-poaching guys to react. Our guards are not going to be looking for dead rhino; they are going to be looking for people to shoot because their lives are going to be at massive risk.

GOV46 said, "A lot of them are saying, 'Why must we risk our lives here? We carry a firearm, sleep in the bush at night with lions around us, and we are scared and there are poachers coming with firearms.'" PGR24 expressed that human life was not seen as valuable by poachers:

If I have a rhino and I cut the horn off and I put the horn in my house, somebody is going to break into my house and kill my family just for the horn because human life at the moment, it's also worth less than that rhino horn. The guys here get shot now for like 10 Rand or a cellphone, so it's got no value. So 700,000 Rand for a kg of rhino horn is a lot of money. That's way more than 10 Rand or a cell phone or one hundred Rand at an ATM machine—there's no comparison.

Many respondents indicated that syndicates are powerful and entangled in various forms of criminal activities that pose risks. For example, NGO25 said, "These syndicates are not just involved in rhino poaching; they remain multibillion dollar illegal businesses, so they're involved in drug trafficking, human trafficking, gun running, and wildlife crime." Most respondents suggested that syndicates were driving fear and intimidating lower-level poachers of rhinoceros and also community members living near private and public protected areas where rhinoceroses were

located. For example, PGR24 suggested, “Where there’s a small village, community, or township next to a conservation area, or a farm or a game farm, there is some intimidation happening there and some force being applied to the population there.” NGO13 said that syndicates intimidate families and anyone living or working on conservancies and lands with rhinoceros: “Somebody comes along and says ‘If you don’t give us information, we’re going to kill your wife or kill your kids.’ People... farmers, game guards, guides have been threatened.”

Some respondents, especially those in the PGR stakeholder group, indicated that SANDF troops are subjected to risks from sources other than just poachers. With the exception of one government official, respondents in the other stakeholder groups did not comment on this issue. PGR20 said, “The defense force is a bit dysfunctional. I don’t think the troops have the experience to work in environments like these. They must know the bush, they must not sit on a truck and hide because they are scared of lions and that sort of thing.” PGR19 said, “They are not having an effect, as they don’t want to be there. They are not familiar with the landscape, the threats, the dangers, the lions, the elephants, the climate, the mozzies [mosquitoes].” GOV50, a leading official in charge of anti-poaching operations, said, “In all fairness to the army, they are more conventionally trained. The bush savvy and the small tactics are lacking. To play a significant role in this, one will have to make some adjustments, to retrain...it’s difficult for them.”

### ***Risk of Arrest***

Many respondents indicated that stakeholders working on the front lines of the rhinoceros poaching issue (e.g., anti-poaching units, veterinarians) were at risk of

arrest when doing their jobs. For example, RANG10 stated, “No one is interested in investigating a case, what actually happened. Sometimes guys make a mistake; you are out there alone in the bush, you pull the trigger at the wrong time, that is murder, 15 years minimum. That affects the success rate in the bush as well because he is not going to just shoot, he is going to think.” NGO13 stated, “We don’t shoot people on sight. It’s illegal and it’s not going to solve the problem. That’s not the right answer, killing people. At the same time, there’s the self-defence thing.” RANG12 said, “Those okes [rangers] have got to make a life or death decision in a split second that courts are going to take three and half years to decide whether they made the right decision or not.” NGO23 noted:

There is that fear that I could go into a court case and be found guilty, so therefore why must I do my job? Why must I risk going out there? I can get shot if I try to arrest somebody, I could get hurt. If that guy points a rifle at me and I shoot him, I can be charged with murder. It is a major, major issue of concern for us and we have seen police officers persecute the APU [anti-poaching unit] member more aggressively than in fact what he should be on the poaching individual.

Likewise, VET44 stated:

I hear a rhino has been darted and I almost have to think, what is my alibi? Where was I? A friend of mine, a colleague, was asked by a client to dehorn a rhino. It wasn’t a long time after he got a knock on the door by a policeman with a warrant to arrest. Then questioned... ‘Did you dehorn that animal? Well the horn has just been picked up at [location].’ He was automatically implicated, arrested, charged. He appeared in the Sunday papers that same weekend. Reputation gone; the damage was done. He lost his wife, his practice, everything. It is that fear that you have that something like that could have happened. If I got falsely accused, I have dedicated my wildlife career to that cause. But, I know people look at vets like this.

GOV50 explained, “The moment you shoot a poacher, it’s a crime scene and the rules of engagement put the onus on you, and a murder docket is opened every time.”

PGR27 detailed:

Our anti-poaching patrol killed a poacher for which he was charged with murder. That is one of the tragedies of this country, legislation that protects the poacher. The consequence is we can't shoot. It isn't as if we shoot to kill anyway. That happened to be on a very, very dark night and he killed a person, it was sort of accidental. Everyone says well done, but the consequences of a fatality are enormous in this country.

PGR20 stated, "One of our guys shot a poacher in the knee and he is still in a wheelchair. He has been charged." NGO52 said, "If a guy in Kruger shoots a poacher, he's immediately charged with murder, but if a games guard in Zimbabwe shoots a poacher, he gets a reward."

RANG21 expressed that there is a lack of support for rangers who are involved in shootings with poachers:

The law is not on our side. If they have killed someone, who is going to pay to protect them? They are going to say to themselves, 'are we on our own now? Are we going to jail now for protecting these people's rhino?' And it can happen in a split second. It is dark, you hear someone running and you look up and see someone with a firearm, you are going to go to jail, whether you like it or not. When the police come to do the investigation and say, 'Who killed that man?' and it was one of my anti-poaching guys, put them into handcuffs and bring them to the police station. And then how vulnerable are you? Who is going to protect you? Who is paying for lawyers to get you out? It is a worry for them.

RANG43 explained, "It is a serious problem because as a ranger, I'm out and a threat pops up in front of me; a man with a gun and he's aiming it at me, and he's going to shoot. If I hesitate, I could die, or worse, the oke [person] next to me dies because I hesitated. You must have that security; you must put it aside. If we act lawfully, we're still at risk." PGR45 said, "The syndicates are well-organized. When you catch a poacher or kill a poacher, a murder charge is opened and you have to defend that in court. And, there is strong evidence the syndicates are defending these guys in court.

Even when they are arrested, they are putting up money for their defence in court cases.”

PGR19 explained that private reserves lack the authority to apprehend poachers outside their boundaries, which places them at risk:

We don't have the authority that the SAPS...SANParks [South African National Parks] have. We are private. We are kicked and beaten if one of my guys is involved in a shooting incident, there is a murder charge. They are on their own. We don't have any protection and it is a huge problem for us. If I have intelligence, detailed information to say that this is the team that is coming, this is the firearm that they will be carrying, this is the vehicle that they will be driving, and this is the time that they will be departing from their destination to here, we will expect them at this time. I ask, 'please, can you guys assist me?' Because it is outside my jurisdiction, which ends at the boundary. I want to catch these guys outside the reserve. 'No sorry, we don't have people that could help you tonight.' That is what we deal with, so it forces the private individual to take the law into his own hands and act outside the parameters because he has to.

There were no notable differences in perceived risk of arrest among the stakeholder groups.

### ***Social and Psychological Risk***

Many respondents, such as NGO41, expressed that field rangers face trauma-inducing situations in the field and are ill-equipped to handle these risks:

The psychological impacts on these guys is no little joke. The effect of being on the ground is horrendous. Our rangers...need a safety net in terms of the psychological trauma that they are exposed to...shooting a person, and then immediately being slapped with a murder charge over their head. And then when you roll that body over, it might be your neighbor in your community. How do you go back to your community and face them? Some of them go off the rails, which manifests itself in many ways and can become critical where you've got someone who is in a state of shock or traumatized out in the field. Their response is going to be impaired and therefore puts the risk on their colleagues. The effect of also the situation on rangers who are out there, and all they find is a dead [rhinoceros] carcass. And, they get sent to another dead carcass and another one. Their whole reason for getting into this is to do conservation work, and now all they are doing is dealing with dead animals.

RANG10 explained that the risks of social and psychological impacts for those on the front lines are numerous:

It is affecting people, post-traumatic stress, and it is affecting people's marriages, relationships, and with neighbors causing a lot of distrust. We don't trust anybody anymore...getting ready to go out on patrol, everyone is watching everybody. 'What have you done? What do you know?' Your guys on the ground, they go through all that trauma, they lose faith in the system, in what they represent, so the whole system is just breaking everything down.

PGR31 noted that PTSD is a serious problem among rangers working for SANParks, which is the agency responsible for managing the country's national parks. He explained that there is a deficiency in standard operating procedures for individuals diagnosed with PTSD. Giving an example, he said, "Mr. X has got PTSD...You know he's going to go home now on leave for at the most a month. When he comes back, what are we going to do with him? Well, this is his job, so here's your gun, off you go." He further detailed that two people were recommended by mental health professionals to never return to the field, yet they returned:

Rangers live and work in game reserves. When they deal with animals that's one thing, and to be attacked by animals is another thing. It's hectic to have something chew on you or threaten you, but most rangers kind of take that in their stride because it's almost to be expected living and working in a game reserve. But, when they now have to start shooting people or people shoot them, and you're dealing with human bodies that are blown apart, that's not so lekker [South African slang meaning great or nice], and that affects them.

Many respondents expressed emotions from continuously being exposed to rhinoceros that have been poached. NGO51, for example, said:

It was the sound, the sound of that animal in pain. You don't expect that sound from an animal that size. So that for me has an impact. I have seen so many poached rhinos...I have become fairly immune to it. It is those kinds of smaller things that now have an impact on me. It is a calf running around in circles next to the carcass of the mother or it is the sound that rhino made.

VET16 said, “People who have not seen this...the way the rhinos are treated, how can you do that to a poor rhino...I am just very disappointed in humanity.”

RANG43 expressed that institutional rot, or internal corruption, can affect rangers and other stakeholders because of the large amount of money associated with rhinoceros poaching:

You’re not involved in rhino poaching at all, but nobody lives at a picket camp alone and generally picket camps have three rangers in them. So, the three of us live in a camp, the two of us go on patrol and we find a dead rhino, a natural mortality. The horns are on it, so we cut the horns off. Now we’ve got the two horns. We go back to the camp; the three of us where each of us lives in a hut and the camp is really small. Either we are going to tell you or you’re going to see them [horns] drying on the roof because they really stink, but you are going to know. And, we’re going to say, ‘listen we’re going to sell this stuff’ and you’ll say, ‘I want nothing to do with it.’ And, that’s fine, but the fact is that we know that you know and you now will forever be in a difficult position, because if you rat, we’ll sort you out and I mean we’ll kill you.

Risks of secondary trauma impacts to family members of rangers were also mentioned by some respondents. For example, GOV50 said, “There’s also the inherent danger and the stress it brings to the family. What that does to families is devastating; the longer hours, the constant danger, the uncertainty.” He explained that KNP is “looking at all sorts of little things to make life at that base a little more bearable...particularly with the wives, because it’s just so tough on them, it just goes on and on and...the normal things that we’ve all experienced in the military and other stressful environments, the coming home and being stressed out and cannot communicate, the well-meant intentions that go down the drain. That normal little cycle that so many families go through.”

Several respondents noted that counseling is provided for rangers in KNP following a shooting incident with a poacher. A few respondents recognized that Africans often rely on means that do not include counselors and mental health

professionals, likening these to Westernized behaviors. GOV47 explained:

With most Africans, because you have to go and do counseling and sit with someone, and then you open up. With us, you can't do that with a stranger. You will be careful, you will tell what you think is best at that time to tell the person, but there is some who you cannot say because you cannot open up to someone who you don't know, so that's another part that I'm worried about in terms of counseling that they're being provided.

GOV47 further stated that rangers can instead take sick leave and seek out alternative practitioners (e.g., sangoma or traditional healer) on their own as they are nationally recognized, but it is not part of the post-incident protocol. RANG43 expressed that psychological support was ineffective in his province:

It's written into our 'use of force policy' where any rangers who are involved in a traumatic encounter such as an animal attack or where we had to shoot at people and they shot at us, regardless of whether someone was killed or not, they have to be interviewed by our organization's social worker. That social worker is not a clinical psychologist, so while I appreciate the gesture from the organization, perhaps...it's just a tick in the box. Because policy says I have to do it, I'll just make a call to the therapist. It's literally a 10-15-minute chat, once, bye-bye, I tick the box, I've complied with policy, and tomorrow we must carry on work. It's not health here.

Likewise, VET44 said:

A military campaign, it's what we're actually trying to simulate. But, the one thing that would be different in a military campaign is that they would rotate troops through here; troops would be well trained, well equipped. They would be deployed for a period of time and then they would rotate, leave, and then the next lot of troops who came in would be freshly trained, motivated, and kitted out. Here, the rangers live and work here, they never leave...you never actually get a break.

### **Perceived Risks to the Broader Public**

The second research question focused on stakeholder perceptions of risks to the broader public as a result of the poaching of rhinoceros. Responses primarily focused on risks to tourists and communities.



### *Risk to Tourists*

Many respondents, such as RANG12, expressed that poaching presented a risk to tourists while visiting South Africa:

My greatest fear is that, because these poachers are opportunistic criminals, is that a tourist is going to be hijacked for his vehicle in order to escape, or tourists are going to be killed because they have a cellphone and this poacher needs a cellphone. That's one of my greatest fears because that will cause the National Parks to be unsafe to travel in...I know its impact on tourism when those two girls were hijacked close to [private game reserve], raped and killed, and rhino poachers took them out. People will say you can't go there. And then you're going to start traveling in convoys, then you're going to start with bigger field ranger groups with less success.

GOV32 said tourism would be negatively impacted if tourists were ever harmed, "If the poachers actually hit the tourists... 'don't go there, there's dangerous folk here, the poachers.'" VET33 stated, "There is a very real threat that a crisis like this could seriously undermine the attractiveness of the country and to tourism. Security is always a risk for tourists and the more they hear about our inability to rescue the situation and fight what is essentially crime, the less confidence any foreign visitor is going to have in the country's ability to protect its people, let alone animals." GVT48 explained that tourists have already had interactions with poachers:

It has happened that tourists see poachers in parks and take photos. Violent criminals could instead open fire on tourists. It can only increase because the tempo of the poaching activities is increasing. Which it is, then the impact on tourism becomes, only, and today, perhaps a rhino gets shot, gets knocked unconscious with the first bullet, they run up to the animal and hack its horns off, not quite dead, it kind of revives itself. It gets up and goes stumbling onto a road in front of a tourist bleeding profusely, stumbling around and dies. That has happened on more than one occasion. The opportunity for them [poachers] to make an escape under pressure when they are cornered, hijacking a tourist is always there. We have had it where tourists have driven around a corner and seen a group of poachers crossing the road in front of them. The guys had phones and phoned saying they were crossing the road. We said this is a poaching group. One guy took a photograph and these guys run off on them. They could quite easily have turned around and opened fire on the tourists

believing they are under threat.

Likewise, NGO53 explained, “because it's a problem, I don't think it's attracted any tourists and in some areas, because poachers are coming in, it becomes a higher risk area for security. If you drive around the corner and there's three poachers in the road who have just killed a rhino, and they've got a .458 and an AK-47 with them...it is only a matter of time before there's an incident.” PGR24 said, “We’ve had two instances of hijacking and armed robbery. Camping numbers have gone down, but the reserve visitor numbers have gone up. You forget, especially in South Africa, about the crime attached to that.” PGR27 stated, “The threat is not just to rhino, it is a security issue. One [tourist] came across a poacher, but fortunately he ran away. The confrontation between the public and a poacher, whether in Kruger or our reserve is terrible.”

PGR45 explained that economic inequality puts some tourists at risk: “Unless South Africa can narrow the gap between the richer and the poorer, they will never have stability. For healthy tourism, you need stability. Because, when the rhino poachers are finished, they’ll say ‘Where else is there money? The money is right here in the camps where people are walking around here with a million Rand worth of cameras.” NGO40 believed that tourists would only change their travel plans if they perceived they would be in real danger: “Just because somebody gets killed doesn’t mean it will stop tourists. When a German got smashed up by an elephant and his car totalled, but then bookings increased, so people think it’s kind of dangerous, but the risks aren’t really that great...if people thought there was a real risk to themselves and their safety, then it might affect their decision to come.”

### *Risk to Communities*

Some respondents also believed that community members may be targeted by syndicates. NGO25, for example, noted:

They [syndicate members] go to the little village close to the border and say, 'You guys you haven't got fresh water; we want to help you. We're going to give you 200,000 Rand ...you submit three or four of your people, we give them rifles, they go in. When they come back with the rhino horn, the village gets [payment].' It's now no more the individual; it's the village. So now they [rangers] intercept this guy and...he's not going to say a word because the village is now a threat, which changes the whole dynamic.

Likewise, PGR19 explained:

It is those [poachers] on the ground who will be intimidating the communities. And, the community won't make a little peep for fear of their life. Some of our anti-poaching forces live in the local communities and are likely to get intimidated... We have 300 employees in this reserve across the landscape; those people will be exposed to rhino poachers at some stage if it hasn't already happened. They will hear someone ask them that they know of someone looking for rhino and whether they can assist them. They will pay them. If you are not interested in assisting, then you might be looked upon as a threat to the rhino poaching organization.

NGO53 explained of community members who share information about poaching (i.e., whistleblowers), "They're going out on a huge risk to themselves, personally. If they get caught, the next thing you'll find them in a gutter with a bullet in the back of their head." NGO40 argued, "The organized crime group connects fairly violently with threats to its business operations, so that's why it becomes very important for the informer network that it's all completely secret and people's identities are never compromised because that could have fatal consequences for the individual concerned."

A few respondents suggested that poachers were targeting humans for body parts. COMM2, for example, said, "We are intimidated because we don't know what

the future holds. There was speculation about people who had been killed then they remove the human knees. Once the rhino poaching is over, they will come and kill people.” RANG12 described scenarios in which misinformation was motivating harvesting of human body parts, “What worries me is that you could have a muti [English version of a Xhosa word for a type of traditional medicine] situation like that where people are killed for body parts pretty much the same as what people are saying if you rape a girl below six, you’re not going to have AIDS anymore.” GOV47 said that people have been killed for their body parts to be used in medicine, but he could not confirm whether poachers were involved:

It’s also a crime, and it’s got a lot of money that was put on it and then they can supplement rhino poaching activities and shift to another crime, cause I tell you the guys who are involved in rhino poaching, they still have cases of other criminal activities. It's not like it's supplementing rhino poaching or it pays more or less, I don’t know about that, but it’s still a crime that is existing that human body parts are being sold depending also on the market and the demand for a specific part.

A few respondents indicated that there were also some risks related to people engaged in activism regarding the poaching of rhinoceros. For example, NGO28, a director of an activist NGO, explained, “I started looking at the whole issue of trade and initially I was the only person against trade, and I would get threatening letters and phone calls from the pro-trade lobby.”

### **Discussion**

These results have implications for both management and research, especially given that risk perceptions may influence stakeholder beliefs, attitudes, and support toward management goals and approaches for protecting and conserving rhinoceros. Notwithstanding the polarization surrounding militarized conservation, it is a practice that is used for tackling the poaching of rhinoceros in South Africa. Understanding

risk perceptions of stakeholders in the context of militarized conservation is a vital part of anticipating the effectiveness and impacts of this or any other management strategy for front line stakeholders and their efforts to conserve rhinoceroses.

For the purposes of this study, it is important to understand the context in which many front line stakeholders find themselves, particularly because risk perceptions and fears are influenced by whether an individual accepts the risk willingly, has knowledge of the risk, has visibility of the risk, and has trust in those managing the risk (Cori et al., 2020). Although most militarization of protected areas includes dedicated surveillance (i.e., reconnaissance aircraft such as military standardized drones and aerial support, foot patrols), it also involves armed tactical operations with potentially deadly outcomes. The poaching of rhinoceros is often led by syndicates and their poachers are well-trained and armed with advanced technology and weapons designed for both poaching and combat. Lunstrum (2014), for example, found that weapons for combat retrieved from apprehended poachers included pistols, assault weapons (e.g., AK47), hand grenades, and RPG-7 anti-tank rocket-propelled grenade launchers.

The quality of preparedness and characteristics of rangers are not standardized, and therefore differ among private game reserves, parks, and other protected areas. Preparedness includes planning, organizing, equipping, training, exercising, evaluation, and taking corrective actions during a response to an incident (FEMA, 2020). In KNP, for example, rangers undergo rigorous paramilitary training that may deviate and conflict with their conservation ecology roots. During training, rangers often experience constraints on food, intense physical exertion, and

psychological stressors (Warchol & Kapla, 2012). Also in KNP, a continuum of force policy ensures that low-level rangers on patrols carry their rifles without ammunition, whereas higher level rangers carry loaded rifles (Warchol & Kapla, 2012).

There was agreement among all respondents that individuals on the front lines are at risk of personal and professional dangers from poachers and poaching-related actions. Respondents perceived high risk of physical danger to those living and working on the front lines, and high risk of legal implications and arrest following a poacher fatality. Violent conflict with poachers is always a potential outcome for private or public security forces who carry out diurnal and nocturnal operations. Risks may shift and change for individuals on the front lines in response to changes in factors affecting perceptions, intuitive judgments, and inferences (e.g., uncertainty, familiarity, personal impact). For example, between 2018 and 2019, KNP recorded a 53% decline in incursions by poachers, which may decrease risk perceptions (de Klerk, 2020). More recently, however, rangers in other African nations reported that the risk of apprehending poachers greatly increased during the Covid-19 pandemic, as they did not know if poachers were infected (Ledger, 2020).

Most respondents expressed that there are also risks from dangerous animals when living and working in the remote and harsh terrain where predators and rhinoceroses are found. Although respondents noted that this was an expected risk for front line workers, several said that military (SANDF) assigned to patrol the KNP border perceived this risk to be high enough that they often did not perform the duties of their assignments effectively out of fear. This perception of SANDF was echoed in Lunstrum's (2015) critique on militarized conservation.

Many respondents also reported that syndicates were intimidating low-level poachers and communities near protected areas with rhinoceros. The act of using community members and the public for intelligence gathering is representative of tactics inherent in militarized conservation (Massé, Lunstum, & Holterman, 2018). Many respondents stated that these informants and whistleblowers are at high risk of danger from poachers and syndicates. Some respondents said there was also risk to stakeholders engaged in activism regarding the poaching of rhinoceros. Recent reports suggest that environmental activists in South Africa are at increasing risk of harassment, intimidation, and violence (including murder) as they may clash with political and business interests. In October 2020, for example, an environmental activist and critic of a coal mine expansion project was killed by four gunmen (Kockett & Hattingh, 2020). Concerns raised over the mine expansion included impacts on rhinoceros and other wildlife in a nearby protected area as road networks and traffic grew, providing easier access for poachers into the area.

Stakeholders on the front lines, from security forces and game reserve personnel to government employees and wildlife veterinarians, respond to poaching incidents on a regular basis where they witness in close detail the suffering and slaughter of rhinoceroses. Many respondents perceived there to be relatively high risk of social and psychological trauma to these stakeholders, and little to no effective therapeutic services for addressing these mental health crises. Research has shown that individuals in occupations that put them in dangerous situations for extensive periods of time or frequent exposure to traumatic events are at risk for mental health issues (e.g., Violanti & Gehrke, 2004). Job performance may become impaired,

leading to potentially lethal consequences (Arnetz, Nevedal, Lumley, Backman, & Lubin, 2008). These individuals may become hyper-aroused and cautious not only when a threat is present, but also when there is no threat. Levy-Gigi, Richter-Levin, Okon-Singer, Keri, and Bonanno (2015) found that first responders and police who did not have PTSD and were repeatedly exposed and trained to high-intensity, traumatic situations were able to cope and function better in the face of high-intensity trauma, and exhibited more resilient responses compared to those exposed to low-intensity situations. Grossman (2014) argued that in situations involving violent conflict, the act of taking another human's life is at least equally as distressing as the fear of dying, particularly when the victim has close visual contact with the victim. He reported that this puts the individual who committed the act of killing at a high risk of developing PTSD and substance abuse issues.

Just as risk perceptions differ among individuals, responses to these kinds of traumas also differ. Individuals experiencing the same traumatic event may respond with resilient coping strategies, exhibit subclinical symptoms that do not meet criteria for a disorder diagnosis, or they may show impairment and meet these criteria. Several respondents indicated that short-term counseling was available following a shooting incident with a poacher, but that it was not comprehensive. The role of psychological support is crucial for helping stakeholders maintain mental health and good job performance in the line of duty. Assessment and treatment of mental health issues for front line stakeholders, such as security forces who have experienced a critical incident or cumulative traumatic stress or are at high risk for mental health issues, have been underutilized, not widely implemented, and are not culturally sensitive. Criteria for



trauma-related disorders have been primarily established in Western nations and seldom cover attitudes and religious or spiritual beliefs of non-westerners (Center for Substance Abuse Treatment, 2014). Similar to other research on police and emergency personnel, clinicians may lack appropriate ways to work with diverse stakeholders from different backgrounds and cultures, and there are various stigmas attached to receiving psychotherapy (e.g., Papazoglou, McQuerry, & Tuttle, 2018). Given that risk perceptions are associated with the potential for developing mental health disorders, appropriate and effective clinical support is vital for front line stakeholders who suffer or are at higher risk of suffering from debilitating effects of job-related stress and trauma. Researchers, employers, and traditional and alternative clinicians and practitioners may consider working together to identify and define specific actions that will aid in supporting the front line workers.

Several respondents indicated that secondary trauma posed risks to families of front line responders. Research on military families, health care workers, and humanitarian workers has found that family members and partners of individuals with social and psychological trauma, including PTSD, appear to also experience largely damaging effects (e.g., Hendrix, Jurich, & Schumm, 1995). Secondary traumatization and increased risk of mental health and behavioral problems may also occur in children of these individuals (Glenn et al., 2002). Family members may experience fear, depression, and heightened emotional distress as a result of the deployment of their family member(s) into the field (e.g., Palmer, 2008). As a result, the divorce rate for rangers is as high as 90% in some countries (Tan, 2018). Studies have shown that individuals, such as police and first responders, with higher quality and accessible

family relationships and greater social support tend to be more emotionally resilient in the face of disaster (Caruthers, 2005; Scott, 2007). Although relatively few resources have been developed to provide people on the front lines with appropriate and effective mental health care, even fewer exist for partners, children, and broader family systems. There is a need for awareness and mental health services to be provided for not only stakeholders on the front lines, but also for their family members.

Many respondents also perceived risks to the public via impromptu contact with poachers. These respondents were concerned about implications for tourism on a national level should tourists experience violent conflict at the hands of poachers. Tourists in wildlife areas where poachers may be present (e.g., national parks, private game reserves) were perceived by many respondents as being at risk. Results also indicated that respondents believed tourism will be negatively impacted in the event of dangerous encounters between tourists and poachers. Many tourists in South Africa's protected areas partake in organized tours and safaris, and stay in luxurious accommodations. In 2019, 1.8 million visitors visited KNP, with average guest costs ranging from US \$225 to more than \$5,000 per night (Froelich, 2020). There is some evidence that these tourists are risk averse, so may likely refrain from travel to destinations with high perceived risks (Lepp & Gibson, 2003). Lubbe, Du Preez, Douglas, and Fairer-Wessels (2019), for example, found that many international and frequent visitors would be inclined to avoid parks in South Africa if exposed to either perceived or actual poachers, or injured rhinoceroses.

This article shed light on the importance of perceived risks associated with the poaching of rhinoceros, and the social and psychological impacts to stakeholders on the front lines of this issue. An improved understanding of these concepts may provide direction for establishing communication, support, and interventions that better protect stakeholders and the broader public. Future research can build on the results presented here in a couple of ways. First, a few respondents indicated that they could not share too much sensitive information due to perceived security concerns, leading to a potential response bias. Despite this, the sample size was ample for a qualitative study to depict responses from a variety of stakeholder groups (e.g., Boddy, 2016; Malterud, Siersma, & Guassora, 2016), and respondents were generally eager to provide their insights and opinions under the agreement of confidentiality. Second, this study was exploratory and provided insights from some stakeholders who are directly impacted by the rhinoceros poaching situation in South Africa. These results, however, are limited to a purposive sample of respondents in a subset of provinces and may not generalize to other people and locations. The applicability of these findings to other groups, countries, and South African provinces impacted by the poaching of rhinoceros represents a topic for additional empirical investigation.

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## CHAPTER 5- CONCLUSION

The aim of this exploratory qualitative study was to advance the fields of human dimensions of wildlife and conservation criminology by exploring stakeholder perceptions of the poaching of rhinoceros across South Africa. As global attention to syndicated wildlife crimes and conservation efforts continue to increase, more people are likely to be exposed to and impacted by these issues. To meet these challenges, science that informs management decisions and the broader social landscape that contributes to successfully protecting and conserving this species (e.g., rhinoceros) must include more diverse stakeholder groups.

This dissertation explored stakeholder: (a) attitudes, norms, and perceived motivations regarding the poaching of rhinoceros in South Africa; (b) perceptions regarding trust, corruption, and punishment related to this topic; and (c) perceptions of risk associated with this issue. Data were obtained from semi-structured interviews with a variety of stakeholders involved in the protection and conservation of rhinoceros across the country (community members, government personnel, non-governmental organization [NGO] personnel, private game reserve personnel, private field rangers, tour operators, wildlife veterinarians). Recent research on the poaching of rhinoceros has examined community attitudes concerning this poaching (Mamba, Randhir, & Fuller, 2019), attitudes toward the consumption of rhinoceros horns (e.g., Truong, Dang, & Hall, 2016), opinions about strategies for compliance and demand reduction (e.g., Sato & Hough, 2016), attitudes toward legalizing the trade in rhinoceros horns (e.g., Rubino & Pienaar, 2018; Wright, Cundill, & Biggs, 2016), and whether individuals favor products from these horns (e.g., Vigne & Martin, 2008).

Given that South Africa continues to experience some of the highest poaching pressure on rhinoceros, information is critically needed about the attitudes and perceptions of various stakeholder groups toward this issue across a wide geographical area within this country because priorities may differ among groups and locations. Without such information, public policies are predicated on speculation about people's attitudes and perceptions.

Chapter 2, the first of the three standalone articles, explored stakeholder attitudes and norms regarding the poaching of rhinoceros, and their perceptions of drivers of the rhinoceros horn trade and motivations of poachers that led to the increase in poaching of this species in South Africa since 2008. Most respondents held negative attitudes toward the South African government's response to the poaching, citing a lack of political will, transparency, financial support toward the conservation of rhinoceros, and poor communication and cooperation with other stakeholders. Respondents were divided in their perceptions of normative influences associated with the poaching of rhinoceros, as several perceived that poachers were concerned about what others thought of them in terms of whether they are viewed essentially as heroes, whereas others believed they were condemned by their community and people important to them. Respondents perceived five main motivations for why people poach rhinoceros: greed, power / status, poverty, income inequality, and being opportunistic. Respondents also indicated that the growing demand for rhinoceros horns originated in Vietnamese and Chinese consumer markets, although there was considerable uncertainty about whether wealth / status or Traditional Asian Medicine was the most significant driver.

This first article contributed to a better understanding of stakeholder attitudes and perceptions about issues hindering progress toward rhinoceros conservation. The results suggested that agencies would be more effective if they considered actions such as being more transparent and improving communication with other stakeholders. Agencies could seek out mechanisms or structured processes for incorporating stakeholders into decision-making. Given that attitudes toward government were also negatively related to the lack of financial support, especially for private owners of rhinoceros (including reserves and conservancies), recommendations included calling for the conservation community and donors to launch funding initiatives to directly support the security needs of these stakeholders who are unable to generate income to continue sustaining and conserving rhinoceros. For conservation efforts (e.g., campaign messages, methods to deliver messages to targeted end-users) to be effective, they should be based on current motivations and drivers of the trade to interrupt the complex supply and consumer demand chain. What might be an effective strategy for end-users who believe in the medicinal value of horns may fall short of impacting end-users who desire the horns for status. For example, wealthy and successful professionals who value rhinoceros horns for status may be fully aware of any evidence suggesting that these horns are medically ineffective, or not associate a stigma with rhinoceros horns. Thus, an awareness campaign on the ineffectiveness of rhinoceros horn for medicinal purposes may not be an ideal choice for this end-user (Dang Vu & Nielsen, 2020). However, because this article showed that motivations and drivers are complex, practitioners should take a multi-pronged approach, incorporating multiple strategies that target drivers associated with specific

geographical locations (e.g., China, Vietnam) and audiences (e.g., Traditional Asian Medicine users).

The second article (Chapter 3) built on these results by examining stakeholder trust in agents associated with rhinoceros conservation and protection, perceptions of corruption in the context of the poaching of this species in South Africa, and opinions about punishments in response to this poaching. Respondents perceived corruption to be pervasive within this context with low trust and high corruption associated with security forces (e.g., South African Police Service [SAPS], South African National Defence Force [SANDF], public rangers), upper ranks of the federal government, some veterinarians, and some NGOs. However, stakeholders perceived greater trust and less corruption among private anti-poaching rangers. Respondents stated that corruption was a serious problem that had increased, with most suggesting that it needed to be the highest priority in addressing the poaching issue. Punishments given to those who poach rhinoceroses were generally perceived by stakeholders as sufficient, although respondents believed that arrest and conviction rates were too low. Few arrests and convictions were attributed to a lack of political will, which is underpinned by corruption and the failure of anti-corruption reforms. Stakeholders perceived this corruption to result in a high risk of physical danger to informants and whistleblowers.

Respondents largely believed that although it is possible to rehabilitate individuals who poach rhinoceroses, this is unlikely to happen due to the high payoff from poaching coupled with the few sustainable economic alternatives and lack of successful programs aimed at rehabilitation in the prison system. A few respondents,

however, did believe that former poachers could be rehabilitated and subsequently make good anti-poaching rangers. Convicted poachers of wildlife in other regions have been successfully reformed following incarceration (as well as those who have not been incarcerated) by offering opportunities for alternative sustainable sources of living coupled with appropriate skills training (e.g., ecotourism, local farming initiatives; Basu, 2018). Consistent with previous studies, results in this article indicated that there may be an urgent need for viable economic alternatives for poachers in South Africa, and a renewed focus on rehabilitation efforts within correctional institutions (e.g., Hübschle, 2017).

Effective law enforcement is crucial for ensuring that individuals within security services who are engaging in corrupt acts in the context of the poaching of rhinoceroses are not only apprehended, but are also punished appropriately. Tackling criminal corruption within security services poses specific challenges, as organized crime syndicates may have many resources available that can provide more financial incentives to individuals than the employing agency provides. Broad recommendations for breaking the cycle of impunity include integrating both punitive and preventative approaches, and coordinating reforms that focus on issues of enforcement, changes in institutional design, as well as public education and participation. Strong legal precedents and an effective judicial system can support enforcement for transgressions related to the poaching of rhinoceros. In addition, mechanisms could be put in place to detect and punish police crime, including removal of corrupt officials. Access to information and transparency are also essential responses for agencies at all levels to have a positive effect on tackling corruption and

building trust. For example, the track record of candidates for high-level appointed positions could be made publicly available. As corruption in South Africa is perceived to be so widespread, future research to evaluate the impact of existing policies and measures in place is warranted to reduce this corruption.

It is also imperative that whistleblowing opportunities and safeguards are enhanced so that potential sources are motivated to share information without fear for their personal safety. Best practices to increase trust in local agencies and authorities include ensuring that incentives (e.g., mandatory monetary rewards) are fair and timely, and the identities of whistleblowers remain confidential (Efrati, Malleck, & Gardner, 2019). Incentivizing whistleblowers to report original information related to wildlife crimes is an important tool that can help rangers and law enforcement successfully apprehend offenders and prosecute cases. Confidentiality of a whistleblower's identity should extend toward other agents and agencies involved in the case.

Given that issues of corruption and trust are related to perceptions of risk, the third article (Chapter 4) examined stakeholder perceptions of: (a) personal risks associated with working and living on the front lines of the poaching conflict in an environment of militarized conservation, and (b) risks to society in general and other groups (e.g., tourists). There was agreement among respondents that individuals and their families on the front lines of this poaching situation are at risk of personal and professional danger from poachers and poaching-related actions. Respondents perceived there to be a relatively high risk of psychological trauma to stakeholders on the front lines, and little to no effective therapeutic services for addressing these



mental health issues. Although respondents noted that this was an expected risk for front line stakeholders and their families, several indicated that members of the military (SANDF) assigned to patrol the border of Kruger National Park (KNP) in South Africa perceived the risks to be high enough that they often failed to perform their duties. Respondents also perceived moderate risk to the general public and tourists from potential encounters with poachers and poaching activities.

Beyond these general perceptions of risk, it is important to identify specific activities and characteristics where individuals feel more at risk. This information can help practitioners target risk prevention measures. Although psychological trauma has yet to be studied extensively among stakeholders on the front lines of militarized conservation environments, parallels can be drawn from existing research on responders in emergency services and in combat settings. More research is needed on factors that may be negatively influencing mental health outcomes in front line responders to poaching events. Future research may help to determine the extent that factors supporting resilience (e.g., mental health screenings) protect against negative outcomes. Management implications include culturally sensitive therapeutic services, available legal assistance, agency support in the event of poacher fatalities, and agency support during times of increased stress (e.g., initial deployment, violent engagements with poachers in the line of duty).

Taken together, these three standalone articles suggest that to gain an understanding of behaviors in the context of the poaching of rhinoceroses, particularly in a situation with systemic corruption, the individual factors (e.g., attitudes, norms, motivations, trust, risk perceptions, psychological trauma) that

inform these behaviors must be understood in relation to the other factors, rather than in isolation. There are many factors driving and enabling behaviors regarding the poaching of rhinoceros, as well as efforts to protect and conserve this species. Consideration of these multiple factors together helps to gain a more complete understanding of the factors and their relationships that can then be used for informing and generating an effective, multi-faceted strategy for addressing this poaching situation and improving the likelihood of reducing poaching. Results highlighted the need for more research into the underpinnings of crimes against rhinoceros that engage interdisciplinary conversation and collaboration among a diverse suite of researchers (e.g., social scientists, political scientists, criminologists, conservation scientists), practitioners, management and enforcement agencies, and other stakeholders.

Future research can build on the results and implications presented in this dissertation in a couple of ways. First, a few respondents indicated that they could not share too much sensitive information due to perceived security concerns, leading to a potential response bias. Despite this, the sample size was ample for a qualitative study to depict responses from various stakeholder groups (e.g., Boddy, 2016), and respondents were generally eager to provide their perceptions and opinions under an agreement of confidentiality. Second, this study was exploratory and provided insights from some stakeholders who are directly impacted by the rhinoceros poaching situation in South Africa. These results, however, are limited to a purposive sample of respondents in a subset of provinces and may not generalize to other locations and individuals. Research is needed to expand this work to other

geographical areas and stakeholder groups (e.g., poachers, urban population, end-users).

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## APPENDIX

### INTERVIEW QUESTIONS

#### A. Characteristics associated with poaching of rhinoceros

1. Could you please tell me your role / position and background / history with respect to this organization and / or location?
2. Could you tell me about your own and / or your organization's experiences with issues related to the poaching of rhinoceros?
3. What do you believe are some of the greatest threats facing rhinoceros in this location (park /reserve)? Why do you think this?
4. Have the rhinoceros in this location ever been targeted by poachers? If so, why do you think these rhinoceros were targeted? How many rhinoceros have been targeted and / or poached in this location?
5. Can you describe the types of people who you think have targeted rhinoceros at this location?
6. What kind of tactics do you think poachers have used in this location to target rhinoceros?
7. What are your biggest priorities with respect to managing / protecting rhinoceros in this location?
8. Can you describe what kinds of approaches, if any, you know of that this location uses to protect rhinoceros from poachers (prompts, if necessary: terrain, fences, field rangers, technology such as aircraft / remote sensing / drones, infusing dye into the horn)?
9. Responses to poaching of rhinoceros in one area may result in the use of new methods, types of transportation or routes, targets, and locations that can be used by individuals to poach rhinoceros. For example, as anti-poaching policing efforts increase in one game reserve or park, poachers may target a different reserve or park with less protection, or they may change the times when they attempt to poach this species. Could you explain if you have witnessed or believe this type of thing has occurred in this location and the circumstances?
10. Do you believe characteristics of poaching of rhinoceros differ between private game reserves and public reserves / national parks (prompts, if necessary: methods used by poachers, incidences of poaching, types of anti-poaching interventions)? If so, why do you think this happens?
11. What do you believe are any similarities between private game reserves and public reserves / national parks in terms of characteristics of poaching of rhinoceros?

#### B. Drivers / motivations of poaching of rhinoceros

1. Do you believe that the increase in the poaching of rhinoceros is a problem / bad thing? If so, what concerns you the most about this issue?
2. What do you view as some of the major reasons for why poaching of rhinoceros has increased in South Africa over the last 5 years?

3. What impacts, if any, do you think poaching of rhinoceros has on South African society (prompts, if necessary: tourism industry, increases other forms of crime)?
4. Do you know what the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is? If so, what are your thoughts on the role that CITES has played in the issue of poaching of rhinoceros?
5. What do you think motivates people to poach a rhinoceros?
6. Do you believe that people in this location or nearby locations poach rhinoceros, or these people feel that it is acceptable to poach this species?
7. Among other people in or nearby to this location, how much agreement would you think there would be that it is a bad thing to poach rhinoceros?
8. Do you think that others in or nearby to this location believe that people important to them approve of them poaching rhinoceros (prompts, if necessary: village leader, elder)?
9. Do you think that others influence people to poach rhinoceros because it will provide money for them and their family?
10. Do you think it is easy for others to get weapons to poach rhinoceros?
11. Do you think it is easy for others to access areas to poach rhinoceros?
12. Do you think that having access to weapons makes it likely that people will poach rhinoceros?

#### C. Management / poaching interventions

1. Do you think it is important for humans to manage / protect rhinoceros populations from poaching? Why or why not?
2. Do you think the loss of some rhinoceros from poaching is acceptable if the population of this species is not jeopardized? Please explain your answer.
3. Do you believe that humans should manage rhinoceros populations so that humans benefit? Please explain your answer.
4. Should humans benefit from rhinoceros and if so, how (i.e., what should this species be used for)? Please explain your answer.
5. What kinds of management approaches in game reserves / parks do you think contribute to poaching of rhinoceros?
6. I would like to ask you about the acceptability and effectiveness of various methods for managing poaching of rhinoceros. I would like you to tell me your opinions about:
  - a. Dehorning?
  - b. Chemical / toxic horn treatments as a deterrent?
  - c. Commercial farming of rhinoceros?
  - d. Legalizing the rhinoceros horn trade / selling stockpiled rhinoceros horn?
  - e. Using unmanned aerial vehicles / drones for patrolling / monitoring?
  - f. Mandatory registration, marking, and DNA sampling of all legally owned or held rhinoceros (i.e., The Rhino DNA Information System – RhoDIS)?
7. Are there any other methods for managing poaching of rhinoceros that you think would be useful / effective?
8. What do you believe is the most significant threat to protecting rhinoceros from

poaching?

9. Do you believe it is important to spend money to protect rhinoceros from poaching?

10. How do you think government funding should be used to address poaching?

11. Do you think local people surrounding game reserves / parks would be a good resource for providing anti-poaching intelligence? Please explain your answer.

12. Do you think conservation organizations / parks / reserves should turn to local people to aid with conservation of rhinoceros?

a. If so, in what ways do you think the local people surrounding game parks and reserves can contribute to improving this situation?

b. If not, why do you believe this?

13. Do you think compiling a database of all non-governmental and non-profit organizations, and individuals who raise funds for anti-poaching initiatives (e.g., the National Rhino Fund), should or should not be established to allow for monitoring of fund-raising operations and uses of the funds raised? Why do you think this?

14. Is there anything more that you feel that you can do yourself to prevent the poaching of rhinoceros or assist in addressing this issue?

#### D. Behavior of others

1. How much trust and confidence do you have in each of the following entities to protect rhinoceros from poaching and enforcing the law:

a. South African National Defence Force (SANDF) troops?

b. Private guards / rangers?

c. South African Police Service (SAPS)?

d. Do you believe any of these entities maintain a good relationship with local communities? Please explain your answer.

2. What do you view as the major reason could be for why only four of nine provinces, holding 20% of rhinoceros (private sector), have not reported any data on their rhinoceros horn stocks to the The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat?

3. Do you think organized criminal syndicates and groups involved in the poaching of rhinoceros are fueling fear and intimidating local residents? What are your thoughts on the roles played by these syndicates?

4. What forms of unethical behavior or dishonesty, if any, do you believe occur among officials and other stakeholders responsible for protecting rhinoceros or regulating the trade? (prompts, if necessary: taking and giving bribes, misuse of public funds, delaying decisions to prosecute individuals suspected of poaching, purposefully delaying action)?

If answer is affirmative:

a. What factors do you think contribute to these types of unethical behavior associated with poaching of rhinoceros?

b. Do you think this type of behavior has increased, decreased, remained the same, or do not know, over the past five years relative to poaching of rhinoceros?

c. Do you believe this type of unethical behavior is nothing to worry about or that it is worrisome?

- 4 To what extent do you believe unethical behavior should be prioritized over other threats to rhinoceros and what should be done to combat these behaviors?
5. Do you think any unethical behavior among some groups has impacted relationships among stakeholders with regards to poaching of rhinoceros (e.g., mistrust, scepticism)? If so, how? If not, what do you think has prevented these types of behaviors from being a problem in relation to poaching of rhinoceros?
6. Do you believe rhinoceros poachers can be rehabilitated? Why or why not?

#### E. Regulations

1. What are your thoughts on current government policies associated with the poaching of rhinoceros?
2. What are your thoughts on the current restrictions on the trade of rhinoceros?
3. What is your opinion on penalties that are given out for convicted poachers? Do you think they are appropriate? Please explain your answer.
4. What do you think each of the following groups should be doing to address poaching of rhinoceros:
  - a. Government agencies (e.g., public parks / reserves)?
  - b. Non-profit / non-governmental conservation or environmental organizations?
  - c. Owners of private game reserves?
  - d. Law enforcement?
  - e. Safari operators?
  - f. Local residents?

#### F. Awareness / education

1. Do you think each of the following people are knowledgeable about issues related to the poaching of rhinoceros, and why or why not:
  - a. South Africans in general?
  - b. Local people surrounding game parks and reserves?
  - c. People from Western countries (e.g., USA, Canada, Europe)?
2. What do you think are the main components of an effective educational or awareness program on issues related to poaching of rhinoceros and conservation of this species?
3. Which, if any, current educational / awareness programs or campaigns on poaching have been effective in fostering public support? (prompts, if necessary: eco-schools, bush camps, guided tours for tourists, educational and visitor centers, museums, outreach programs to schools in surrounding local communities). Please tell me why you think they are or are not effective?
4. What kinds of educational or awareness programs regarding poaching of rhinoceros would you like to see more of in the future?
5. Do you feel that use of any interpretive materials that you may have seen regarding poaching of rhinoceros, such as information boards, signs, and plaques (e.g., at rest camps in the National Parks):



- a. Have been effective in challenging people to think about the issues / increase awareness? Please explain your opinion and what you think would make them more effective in this way?
  - b. Communicate effectively and meet the needs of different cultural and socioeconomic groups with appropriate themes and messages? Please explain your opinion and what you think would make them more effective in this way?
6. What steps, if any, do you feel should be taken toward enhancing understanding and awareness of poaching issues among:
- a. Tourists / visitors?
  - b. Residents of local communities?

#### G. Concluding questions

1. What personal risks, if any, do you face or experience resulting from your exposure or involvement with rhinoceros conservation?
2. Is there anything that I have not asked you that you would like to share with me about the topic of poaching of rhinoceros?
3. Is there anyone else who you think I should talk to about this issue?

\* Some questions were not included in the formal interview schedule as this study was exploratory.