Disentangling and Demystifying Illegal Wildlife Trade and Crime Convergence

by

Michelle Anagnostou

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Examining Committee Membership

External Examiner	**Dr. Inés Arroyo-Quiroz** Researcher, Regional Center for Multidisciplinary Research, National Autonomous University of Mexico
Supervisor	**Dr. Brent Doberstein** Associate Professor, Department of Geography and Environmental Management, University of Waterloo
Internal Member	**Dr. Derek Armitage** Professor & Director, School of Environment, Resources and Sustainability, University of Waterloo
Member	**Dr. Marie-Claire Cordonier Segger** Professor, School of Environment, Enterprise and Development, University of Waterloo
Internal-External Member	**Dr. Peter Stoett** Dean and Professor, Faculty of Social Science and Humanities Ontario Tech University

Author's Declaration

This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Statement of Contributions

I hereby declare that I am the lead author for all four manuscripts. My supervisor provided feedback, suggestions, and editorial changes to Chapters 3.

Exceptions to sole authorship:

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Abstract

Illegal wildlife trade represents a significant and growing form of organised crime. In recent years, illegal wildlife trade has been increasingly reported as being perpetuated by the same people trafficking in drugs, humans, and arms, and committing acts of terrorism, a phenomenon often labelled “crime convergence”. However, limited empirical research has been conducted to understand the extent and nature of these convergences. This doctoral dissertation addresses that knowledge gap.

Chapter 2 of this dissertation provides the theoretical foundations to understand crime convergences and illegal wildlife trade based on synthesized interdisciplinary literature, and reviewing diverging perspectives. This study argues that a deeper understanding of crime convergences is needed to facilitate the implementation of more effective, equitable, cooperative, and disruptive law enforcement. Chapter 3 comprises a comprehensive global scoping review, systematically collecting information on crime convergences in the illegal wildlife trade from various disciplines and types of evidence. This study determines which illegally traded wildlife species converge with which other serious and organised crimes, and where convergences are reportedly occurring globally. This study also expands and details a typology of crime convergences. I identify the following distinct types of crime convergences that link illegal wildlife trade with other serious and organised crime activities: barter trade, bonded labourers, common fixers, diversification, geographic convergence, high-profile criminal consumer, parallel trafficking, enabling crimes, shared smuggling

routes, taxation, and threat finance. Product convergence also emerges in Chapter 3 as new type of crime convergence from interviews with law enforcement personnel.

In addition to the development of theory and typologies, further research is needed to understand how often the convergences reported in the literature occur in reality, and to identify the challenges and opportunities for practitioners who are tasked with addressing converging crimes. Chapters 3 and 4 build on the previous studies to empirically-ground convergence theory. Semi-structured interviews were conducted with 112 law enforcement personnel and other illegal wildlife trade experts. The research focuses on South Africa, Hong Kong, and Canada to understand the extent of crime convergence based on expert knowledge, experience, intelligence, and real cases. Global experts from various other countries were also recruited for interviews to provide additional insights on how the regional cases fit into the broader global context (e.g., United States, China, Nigeria, Mexico, Indonesia, the United Kingdom, Mozambique, and other regional and international experts).

The results of Chapter 3 show that illegal wildlife trade converges with a variety of illegal activities, including illegal drug trade, such as cocaine, cannabis, and heroin; sex trafficking; child prostitution; trade in human body parts; migrant smuggling; forced and bonded labour; illegal alcohol trade; illegal firearms trade; vehicle theft and trafficking; counterfeit and pirated goods trade; and illegal trade in mined resources; among others. Many interviewees who have led large investigations confirm that finding convergence is the norm, although crime convergence does not always equate to sophistication. Crime convergence can range

from opportunistic and ad hoc, to sophisticated and sustained by an established network. For the latter, adopting an organised crime approach to countering illegal wildlife trade is essential to dismantle criminal networks that are involved in a variety of offenses and illegal trades.

Organised crime can be characterised by the use of corruption, violence, and money laundering. This thesis demonstrates that all three of these tools are used by wildlife traffickers, making infiltrating, and dismantling illegal wildlife trade networks more difficult. Chapter 4 highlights that counter-illegal wildlife trade practitioners often felt they lacked the support, resources, and staffing to adequately address illegal wildlife trade. This study identifies numerous challenges in dismantling wildlife trafficking networks, particularly their use of organised crime tactics, and barriers regarding information sharing, collaboration, and conducting large complex investigations. The top three foundational steps for the jurisdictions are: ensure better integrity management and accountability for corruption; develop and implement an effective communication strategy to promote public awareness; and increase staffing of wildlife law enforcement agencies and allocate additional resources, including increased funding and improved access to investigative technologies and equipment.

This dissertation makes significant advancements in crime convergence theory and enriches the global empirical data. Through four interrelated studies, this dissertation illustrates that illegal wildlife trade is a complex form of crime that relates to a myriad of other serious and

organised crime activities. The results also indicate that convergences themselves can take many forms, and therefore should be considered with a nuanced lens. The dissertation advocates for the adoption of more collaborative approaches to mitigate converging crimes. The studies also highlight that tectonic shifts are required to prioritise illegal wildlife trade more appropriately, and to combat the dynamic and innovative strategies of wildlife traffickers more effectively.

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Dedication

This thesis is dedicated to all the brave, unsung, and committed individuals around the world who work tirelessly to mitigate illegal wildlife trade.

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Chapter 1
Introduction

1.1 Research Context

International illegal wildlife trade (IWT) involves the extraction of wild plants and/or animals from a country of origin, their transportation across borders, and their eventual sale in a foreign destination country in contravention of international or state wildlife laws. However, illegal wildlife trade supply chains can also exist entirely within a country's borders. Illegal wildlife trade, whether domestic or international, can have extensive and profound impacts on a wide range of geographic regions and sectors of society, including acting as a major driver of global biodiversity loss (Maxwell et al., 2016), and zoonotic disease outbreaks (Chomel et al., 2007; Swift et al., 2007). Ecosystems can be harmed by the introduction of invasive species resulting from wildlife trafficking, which may also transmit new diseases to native wildlife (Wyatt, 2022). It is also important to consider the stress, pain, and suffering, that non-human animals experience through illegal wildlife trade processes (Wyatt, 2022).

The depletion of wildlife populations and subsequent damage to the health of their ecosystems threatens the food security and livelihoods of communities that rely on these ecosystems, including Indigenous communities (Brashares et al., 2014). For example, the over-exploitation of an apex predator such as sharks can lead to the over-abundance of prey species (e.g., Ferretti et al., 2010). This can in turn lead to the over-harvesting of the next

trophic level in the ecosystem, including increased browsing and declines in flora abundance, and even altering abiotic processes (Ripple and Beschta, 2012). Alternatively, the over-extraction of a prey species for illegal trade (e.g., Lindsey et al., 2011) limits food availability for predators, potentially impacting their populations and intensifying human-wildlife conflicts (e.g., lions and livestock; Trinkel, 2013). Human-carnivore conflicts can further drive retaliatory illegal hunting and trade. These impacts on wildlife and ecosystems may be exacerbated by the combined effects of climate change (Trinkel, 2013). Losses in wild plants and animals due to illegal trade can also cause significant harm to local communities that derive benefits from living near healthy ecosystems, including reduced wildlife-based economic opportunities, such as ecotourism (Lindsey et al., 2011).

Illegal wildlife trade has long been thought of as a problem for conservationists to address. Conservation biology has long explored threats to wildlife by focusing on natural sciences theory and approaches such as ecology, population modelling, and genetics, with limited exploration and analysis of social factors and compliance (Boratto and Gibbs, 2021). Early research on wildlife trafficking was primarily guided by theories from natural resource management, focusing on how to sustainably harvest and trade wildlife (Sas-Rolfes et al., 2019). The field of economics has also been pivotal for understanding the optimal harvesting levels for renewable resources, the role of property rights in rates of exploitation, and the consequences of decisions relating to trade bans, farming, and stockpile management (Sas-Rolfes et al., 2019). A significant portion of this initial research centered on large, charismatic mammal species such as elephants, tigers, and rhinoceroses (henceforth,

"rhinos") (Sas-Rolfes et al., 2019). Economic research has found that the probability of interception by anti-poaching patrols may be more of a determinant to organised elephant poaching than the illegal market price of ivory, which has relevant implications for suggestions to "flood the market" (Lopes, 2015). Despite possible synergies, literature from conservation and resource management studies and criminology and crime science have yet to be fully integrated, which is thought to be hindering knowledge development (Boratto and Gibbs, 2021). Further, as this thesis explores, the use of organised crime tactics may mean that illegal wildlife trade requires an organised crime approach to address it. Growing recognition of the value of these interdisciplinary synergies has contributed to the rise of fields such as green criminology, and conservation criminology, so called "academic cousins" (Kahler and Gore, 2017).

Within these interdisciplinary fields, there are a variety of theories to explain wildlife crime offending and deviance from conservation rules (Von Essen et al., 2014). These theories can be differentiated into criminology's "instrumental perspective" and "normative perspective." The instrumental perspective includes Rational Choice Theory, wherein the offender decides that criminal behaviour is rational, and they have weighed the costs and benefits of committing the offense (Clarke and Cornish 2001; von Essen et al., 2014). Simply put, the prospective offender has decided that committing a crime is worth it because they will not get caught, and the economic benefits outweigh the potential costs (Moreto and Pires, 2018). On the other hand, the normative perspective to explain offending emphasizes the role of moral, ethical, philosophical principles (Moreto and Gau, 2017). Compliance depends on

perceptions of justice and whether the law is perceived as legitimate and aligns with internalised beliefs that complying with the law is 'the right thing to do' (as opposed to compliance motivated by fear, as with the instrumental perspective (Moreto and Gau, 2017)).

Illegal wildlife trade has also been explained using the Routine Activity Approach which suggests that a crime will occur when a motivated offender finds themselves with the opportunity of a suitable target and a lack of capable guardians (Moreto and Pires, 2018). Capable guardians can include patrolling law enforcement officers, as well as the simple presence of everyday people (Moreto and Pires, 2018). The low law enforcement presence in protected areas where many wildlife crimes take place, and in many illegal wildlife markets, reduces the power of informal guardianship, which may then decrease the opportunity costs of engaging in illegal wildlife trade (Kurland et al. 2017; Moreto and Pires 2018). Situational crime prevention refers to strategies that disrupt the immediate context and environmental factors that allow illegal wildlife trade to take place, such as the implementation of surveillance technologies at multiple stages of the supply chain (Kretser et al., 2017).

The normative perspective is essential to understand why traditional law enforcement methods are sometimes not sufficient to deter crimes, as the role of social norms and standards can factor heavily in crime prevalence (von Essen et al., 2014). Addressing illegal wildlife trade requires changing human behaviour throughout the supply chain. However, the behaviour of illegally trading in wildlife can become the accepted norm in communities, especially communities that have experienced historical injustices (Anagnostou et al., 2021).

A review of literature from conservation, criminology, criminal justice, and social psychology developed a theoretical framework to understand how multidimensional poverty is a driver of wildlife crime (Anagnostou et al., 2021). The framework explains how addressing the systemic causes by improving economic, human, socio-cultural, political, and protective capabilities will indirectly reduce wildlife crime offending. Risk factors for wildlife crime include acute shocks such as unemployment, lowered wage rates, limited access to education and opportunities to develop healthy social networks, limited community participation, a limited voice in decision-making, emotional distress, and a lack of access to essential services such as healthcare (Anagnostou et al., 2021). Approaches to prevent illegal wildlife trade can combine the recommendations from a variety of these models, including revising trade quotas for social and environmental sustainability, traditional law enforcement efforts for crime prevention and deterrence, changing social norms, and poverty alleviation, to name a few.

While theoretical approaches centered around the offenders and contexts of illegal wildlife trade are valuable, product-focused approaches can also be used (Moreto and Lemieux, 2015). For example, the CRAVED framework theorises that wildlife theft depends on the wildlife's Concealability, Removability, Availability, Value, Enjoyability, and Disposability (von Essen et al., 2014). Since each of these factors shift as wildlife moves along the illicit supply chain, the updated and more comprehensive model is the CAPTURED framework, which focuses on the wildlife's Concealability, Availability, Processability, Transferability, Usability, Removability, Enjoyability, and Disposability (Moreto and Lemieux, 2015).

Understanding and discussing the organised crime dimensions of illegal wildlife trade has proven difficult. Scholars have yet to agree on a definition of 'organised crime' or an 'organised crime group,' which creates challenges in its identification (Kirby and Snow, 2016). Indeed, over 200 unique definitions of organised crime have been developed (von Lampe, 2016). The most universally applicable definition of an organised crime group is presented in the text of the United Nations Convention against Transnational Organized Crime, or the Palermo Convention, which defined the term as, "a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit" (UNGA, 2000). The structure, size, organization, and operations of organised crime groups and networks vary greatly across different regions and types of crime. Some of the common features may include a level of sophistication and continuity to their criminal activities, the steady provision of an illegal good or service, an ingrained collective identity among members, firm alliances with political and corporate elites, and the use of violence, corruption, and money laundering as enabling crimes (Papachristos and Zhao, 2015; Lavorgna, 2020). The drivers of transnational organised crime can generally include the intertwined effects of inequality, poor governance, and corruption (van Dijk et al., 2022).

Modus operandi is a commonly used term in criminology to describe a way of operating, including actions, traits, and behaviours used by organised crime (Smith, 2009). A common

component in the *modi operandi* of organised crime groups is the use or threat of violence. In fact, violence is increasingly considered as a necessity that organised crime groups cannot do without (Kotzé et al., 2022). The threat and use of violence is commonly used by organised crime groups to manage competition, establish corruption, resolve competition between other criminal groups, and to prevent people from testifying against them in court. However, overt violence must be controlled and only used strategically to avoid attracting too much unwanted attention from law enforcement authorities, and to avoid deterring potential criminal collaborations (Kotzé et al., 2022).

Studies of organised crime group violence have generally found that: a person who has been subject to violent victimization is more likely to be victimized again; a former victim of harassment is likely to escalate retaliatory action into violence against their harasser; and that violence is often reciprocated by the former victim. Organised crime groups can have a lot of violence internally among members, as co-offending (of a violent act) increases the chances of a one of the offenders then using violence against their co-offender (Niezink & Campana, 2022). Furthermore, gunshot victimisation of a criminal offender increases with greater exposure to violence through the victim's social network (Papachristos et al., 2015). The use of violence is therefore a self-perpetuating cycle.

Corruption involves the abuse of entrusted power for rent-seeking and private gain (OECD, 2018). The corruption tactics used by transnational criminal networks interfere with the legitimacy and integrity of state structures (Mandel, 2011). At the same time, the violence

employed by organised crime threatens the safety of law-abiding citizens and government officials, while also undermining the government's ability to protect its people (Mandel, 2011). Corruption is rampant throughout an illegal wildlife trade network – including frontline rangers, wildlife law enforcement personnel, police officers, customs officials, port authorities, entry–exit inspectors, diplomats, prosecutors, and politicians (van Uhm and Moreto, 2017; OECD, 2018; Anagnostou and Doberstein, 2021). One of the challenges in eliminating corruption in illegal wildlife trade supply chains is that authorities rarely further investigate corruption when wildlife is seized at borders (OECD, 2018). Organised crime groups and networks consider bribes to corrupt officials as an accepted operational "cost of doing business" and can even establish agreements on a certain percentage of trafficking commodities to be seized by authorities, which is similarly considered an operational cost for traffickers (Basu, 2014). Organisers of illegal wildlife trade systems may select a "fall guy" to get caught and arrested, then the seized wildlife products can be sold back to the group (Christy, 2010).

A common feature of successful trafficking operations is that these illegal activities require legitimate 'covers' to justify the movement of funds and conceal illegal goods. Money laundering and tax evasion are vital components of illegal wildlife trade (Viollaz et al., 2018). Knowledge of money laundering risks associated with illegal wildlife trade is still developing, although common cover corporations might be semi-legitimate natural resource extraction, wildlife trade, and/or import-export firms. The Financial Action Task Force (FATF) is an intergovernmental organisation founded in 1989 to counter money laundering,

but it was not until June 2020 that they recognised illegal wildlife trade as money laundering crime (FATF, 2020). Illegal wildlife traders often use front companies, layering, and money mule accounts (FATF, 2020). Both private sector organisations and public enforcement and regulatory agencies play essential roles in securing international supply chains, and partnerships between these two sectors is likely to have significant benefits.

Modus vivendi refers to the relational arrangements in an organised crime network, including the formation of symbiotic relationships. Transnational organised crime requires members to build networks and social capital and involves actors with varying degrees of legitimacy (Smith, 2009). Researchers therefore use network approaches to understand social and criminal relations and the changing dynamics of networks (Bouchard, 2020). Research on illegal wildlife trade has typically concentrated on the individuals who illegally harvest wildlife and who consume wildlife contraband, neglecting the middle operational layer of these international networks. There are a wide variety of actors that engage in illegal wildlife trade, from people who use the profits for basic subsistence, to actors who use the profits to become multi-millionaires. Even traffickers of wildmeat can range from: trading charities (fulfilling a social purpose, such as cultural or medicinal); mutual societies (who simply derive enjoyment from collecting rare species); business sideliners (with legal businesses and opportunities to branch into wildlife trafficking); criminal diversifiers (who are engaged in other crimes and incorporate wildlife); to opportunistic irregulars (who capitalize on trafficking opportunities as they arise) (Gore et al., 2021). Studies on network and group-

level dynamics are extremely limited, a trend that holds true for organised crime in general (Li and Liu, 2017).

Intermediaries and brokers in organised crime networks may be chosen through trusted mutual contacts, prison contacts, or people who grew up in the same location ("fellow countrymen"; Luong, 2020). When a particular ethnic group monopolizes a type of crime, ethnic affiliation can be a significant factor in criminal networking (Bouchard, 2020). However, the effects of globalization may have reduced this importance. Recent years have seen more criminal ties being established across regions and ethnicities. This is thought to allow new access to poly-commodity networks and markets (Li and Liu, 2017). Organised crime groups may be less likely to collaborate with each other when they operate in overlapping markets and when groups have different subcultures (Coutinho et al., 2020). Therefore, as organised crime groups become increasingly networked globally and establish ongoing collaborations with organised crime groups in other countries and continents, we may begin to see higher levels of sophisticated crime convergence (e.g., drug trafficking, human trafficking, unreported and unregulated fishing, and other wildlife trafficking). Given the difficulties in researching organised crime activities, relatively little is known about how different types of criminality interlink or overlap ("crime convergence") in various countries around the world.

1.2 Research Objectives and Questions

The objective of this study was to create a deeper understanding of and appreciation for the complexities of criminality in illegal wildlife trade. The research aimed to understand what "crime convergence" means within the context of illegal wildlife trade in order to contribute to the design of more effective and appropriate counter-illegal wildlife trade approaches. The study sought to develop convergence theory, and test and build on this theory using empirical qualitative data on real criminal cases and networks.

Specific aims included: (1) to conduct a thorough systematic review to consolidate existing fragmented knowledge and use this knowledge to develop a theory to explain wildlife trafficking convergences; (2) to provide empirical evidence by interviewing people with diverse expertise at various stages of the supply chain; and (3) to use the knowledge gathered from the study to highlight the immense challenges faced by wildlife law enforcement, and to identify concrete solutions and interventions to overcome them, including developing a list of foundational next steps that could be prioritized.

This dissertation aimed to answer the following overarching research questions: How does international illegal wildlife trade converge with other serious and transnational organised crime? And how can the wildlife law enforcement community better respond to illegal wildlife trade as a type of organised crime?

Specific research questions included:

1. What types of serious and organised crime activities converge with illegal wildlife trade?
2. What are the characteristics of crime convergence as it relates to illegal wildlife trade? Can a conceptual framework and typology be developed to guide the investigation of crime convergences?
3. Which factors shape how crimes converge? How do convergences differ along the supply chain, and by the wildlife being traded?
4. What are the challenges to countering organised illegal wildlife trade? How can we improve responses to better mitigate illegal wildlife trade and converging crimes?

1.3 Methodology and Methods

1.3.1 Ontology and Epistemology

Critical realism provides a robust framework for researchers to develop a deep understanding of reality (see Bhaskar, 1978). Critical realism accepts the positivist search for objectivity and a truth that is not based on human consciousness. However, critical realism also maintains that we cannot eliminate perspectivism, and that our understanding of the world is socially constructed (Sayer, 2000). In other words, while an objective reality exists, our knowledge of it is transitive, complex, and inherently mediated by human experience, knowledge, and discourse. Bhaskar posits that reality can be differentiated between the

empirical (experiences and observations of events), actual (events and regularities), and the real (causal mechanisms and structures) (Oliver, 2012; Hoddy, 2019; Fletcher, 2016). This means that at the empirical level, there are a variety of ways of knowing, as people's experiences and understanding of events may differ. By exploring all three realities in social science research, we can develop rich and comprehensive evidence-informed theories. Positivist approaches may therefore be unsuitable on their own to understanding complex social science inquiries. Critical realism is a useful philosophical framework to apply to the present study. The layered nature of reality and the multilevel relationships between crime, poverty, corruption, development, and conservation, means that multiple scientific disciplines and methodological approaches are required in endeavors to understand these relationships (Haigh et al., 2019). A critical realist researcher will be able to begin with the experienced results of crime convergence, and then work backwards to explain how and why it occurs (Hoddy, 2019).

Applying a critical realist ontology (realism) and epistemology (fallibilism) has methodological implications (Fletcher, 2017; Yucel, 2018). One methodological approach that is common in the social sciences for inductively making inferences about causal mechanisms, is grounded theory (Bhaskar, 1978; Oliver, 2012). Grounded theory is a research methodology which involves the systematic development of theory by concurrently collecting and analysing data (Glaser and Strauss, 1967). Critical realism is considered compatible and congruent with grounded theory approaches to qualitative social science research (Bhaskar, 1978; Oliver, 2012). There are numerous challenges associated with

researching the topic of wildlife trafficking and crime convergence: the concept of crime convergence is not directly observable; it is an illegal activity and therefore cannot be soundly quantified; data on converging crimes are not currently being recorded in major IWT databases; and the general lack of research on the topic means a grounded theory approach may be most suitable. Grounded theory is an inductive approach to qualitative research, which means that theories are generated from collecting and organising data (Williams and Moser, 2019).

The framework for this research was developed through the integration of insights from multiple disciplines, including criminology, crime science, international security studies, conservation social sciences, and political ecology. This thesis also uses a human geography lens to consider the complex relationships between human societies globally and the proliferation of organised illegal wildlife trade, and how to mitigate it. For example, political geography features heavily in this thesis through consideration of governance and corruption, and how these factors relate to understandings of crime convergence. In addition, border studies is used to examine issues of border security as it relates to crime convergence, as well as factors affecting cross-border collaboration in anti-trafficking efforts, including territoriality and international, national, and organizational silos in law enforcement. Behavioural geography is relevant in this study for understanding decision-making and risk assessments in criminal networks and law enforcement organisations, and how human actions are influenced by the environment. Development geography is also useful in this study to understand how different levels of social and economic development impact crime

patterns. Finally, cultural geography is a helpful contribution to consider cultural dimensions, attitudes, and values within criminal networks and organisations tasked with combatting illegal wildlife trade, and how they vary across spaces. By incorporating human geography perspectives, this study can achieve a more comprehensive understanding of the environmental and socio-political factors influencing the dynamics of crime convergence. The theoretical discussions of Chapter 2 and the systematic scoping literature review of Chapter 3 encompass a comprehensive critical review of relevant literature from these interdisciplinary fields. Critical realism encourages researchers to avoid any commitment to the content of specific theories. Therefore, the literature review helped to build an initial theory, which could then be supported, elaborated on, or challenged as the project progressed through empirical data collection (semi-structured interviews) and new theory begins to be formed (Bhaskar 1979; Fletcher, 2016).

Qualitative research is valuable as researchers have the opportunity to build a complex, holistic understanding of the issue in question (Castleberry and Nolen, 2018). Thematic analysis of transcribed interviews can explore complex patterns in the data at a deeper level than quantitative analysis (Castleberry and Nolen, 2018). Open-ended inquiry in the semi-structures interviews allows for new and unanticipated knowledge to emerge (Mohajan, 2018). By using a qualitative approach in the present study, I gained rich insights and a holistic interpretation of the topic in question and had the opportunity to learn from differing perspectives. In addition, participatory methodologies in qualitative research involve engaging research participants actively in the research process. Participatory methodologies

can be empowering of respondents by recognizing and incorporating their input, perspectives, and experiences (Mohajan, 2018).

1.3.2 Methods

This section provides a brief overview of the methods used in the research, which are detailed in the respective chapters. Chapters 1 and 2 were derived from thorough literature reviews. Chapter 1 was developed through an unstructured narrative review of the literature, which served as the basis for constructing a comprehensive perspective and theoretical foundation. Chapter 2 involved a systematic literature review. The results presented in Chapters 4 and 5 were derived from fieldwork and interviews with law enforcement personnel and other experts.

1.3.2.1 Systematic Literature Review

I searched online resources for English language publications published between December 2000 to January 2020. I identified peer-reviewed papers using 6 online databases including Web of Knowledge (n=69), Scopus (n=119), Google Scholar (n=624), ProQuest (n=73), Dow Jones Factiva (n=93), and Nexis Uni (n=90). I also identified additional grey literature reports from websites for 57 of the main international organizations that work to address wildlife trafficking (Table 3.1). I also included organizations that focus on understanding and combatting transnational organised crime more broadly. The search query consisted of terms identified by the authors to describe illegal wildlife trade, the concept of crime convergence, and other organised crime activities. The (n=654) reports were screened using pre-defined

inclusion and exclusion criteria that are detailed in Section 3.3. Papers were included if they refer to illegal wildlife trade and links to other serious and organised crime. The articles were then gathered and de-duplicated in Zotero, a citation management software. The remaining (n=205) articles were selected for detailed full-text reading and further screened into n=106 publications. I then reviewed the reference lists of the 106 publications to identify additional potentially relevant results. This resulted in a list of 92 additional papers, which were then screened using the pre-defined inclusion and exclusion criteria. After screening the additional papers, 44 were chosen to be included in the results. Therefore, the total number of papers included in the review was 150. Included papers were coded by: the location of the convergence, the type of wildlife product or taxa involved, the other illicit crimes and commodities involved, and the type of convergence (taxation, barter trade, parallel trafficking, bonded labourers, common fixers, geographic convergence, shared smuggling routes, diversification, high-ranking criminal consumers, threat finance, enabling crimes).

1.3.3 Interviews

The interviews aimed to gather information from practitioners in various sectors on how wildlife trade intersects with other forms of serious and transnational organised crime. As illegal wildlife trade is a global issue, three jurisdictions were selected, South Africa, Hong Kong, and Canada, to compare findings on different interconnected continents and at various stages of international supply chains (additional details in Section 1.3.4 below). Experts from various other countries were also invited for interviews (n=12) to provide added insights on how the regional cases fit into the broader global context (e.g., United States, China, Nigeria,

Mexico, Indonesia, the United Kingdom, Mozambique, and other regional and international experts). Interviews were conducted in person where possible, although fieldwork was limited due to COVID-19 restrictions on travel and in-person research at key stages of the project. Fieldwork took place for 10 weeks in March, April, and May 2023 in South Africa, for 7 weeks in June 2023, July 2023, and April 2024 in Hong Kong, and intermittently between November 2022 and April 2024 in Canada. Three non-probability sampling designs were used to identify study interviewees: purposive, expert, and snowball sampling (See Sections 4.3.2 and 5.3 for additional details).

Interviewees included: law enforcement, including employees from national and provincial wildlife law enforcement agencies, national and local police, and customs intelligence (n=52); non-governmental organisation (NGO) experts (n=28); NGO investigators who directly gather intelligence and advance wildlife trafficking investigations (n=8); anti-money laundering specialists, including from financial institutions and financial intelligence units (n=8); members of wildlife crime and law enforcement research institutions, including academia and think tanks (n=7); legal professionals, including prosecutors (n=5); staff of private anti-poaching units (n=3); and intergovernmental organisations (n=1).

I analysed interviews through multiple types of coding, starting with open coding to identify emergent ideas in the data (Saldaña, 2015; Strauss & Corbin, 1998), which were organised into columns in Excel. In Chapter 4, the coding of interviews was initially guided by the outcomes from the scoping literature review of Chapter 3. This included coding the location

of the convergence, the type of wildlife product or taxa involved, the other illicit crimes and commodities involved, and the type of convergence. However, the initial use of open coding allowed me to go beyond these concepts to identify new codes and themes that had not been identified in the literature review (e.g., 'illegal trade in human body parts' as a crime type). In Chapter 5, the interview codes were developed independently from the codes used in the scoping literature review, as the themes focused on the challenges and opportunities for law enforcement (which were not key results of Chapter 3). As the study aimed to explore a new and under researched topic, themes were initially identified through a preliminary assessment of the text of the interview transcripts, without preset codes (Charmaz, 2006). Following open coding, both Chapters 4 and 5 then applied a non-linear cyclical process of open, axial, and selective coding before constructing theory and interpreting meaning (Williams and Moser, 2019). Though a laborious and time-consuming approach, I elected to code and analyse the data manually. This was a personal preference, as the careful and close reading and direct engagement with the data can allow for deep immersion with the text, accurate interpretation of interviewees' intended meaning, and for subtle nuances to be revealed.

1.3.4 Jurisdictions of Focus

As illegal wildlife trade is a global issue, three study locations were selected in South Africa, Hong Kong, and Canada to compare findings on three different interconnected continents and at various stages of international supply chains. Following completion of the literature review in Chapter 2, South Africa emerged as having the highest number of crime convergences publicly reported in English. This made South Africa an obvious choice for the

first country, as the law enforcement and civil society experts there were likely to have an in-depth knowledge on how various types of crimes are linked to illegal wildlife trade, and how convergences have evolved over the years.

As South Africa is generally a key source for illegal wildlife trade for international markets, transit and destination states were selected for the other jurisdictions so that crime convergence patterns may be identified based on stages of wildlife trafficking supply chains. Hong Kong has been identified as having weak systems for wildlife trade traceability and is widely recognised as one of the most important locations for illegal wildlife trade transhipments and re-export globally. Canada is a severely understudied context for illegal wildlife trade (Hamers et al., 2023), although its porous borders, proximity to the United States, abundance of high-value wildlife, wealthy populations, and deep cultural and historical ties to natural resource exploitation make it a probable location for illegal wildlife trade. Canada plays a role as source, transit, and destination for illegal wildlife trade. According to some reports, wildlife and wildlife products such as polar bear parts, turtles, narwhal tusks, and walrus tusks are "commonly trafficked" (GITOC, 2023a).

The concept of “environmental crime hubs” was an important factor in selection of the three locations. Components of a hub for environmental crime may include easy land or maritime access; access to trading routes; access to illicit environmental commodities; state corruption and/or acquiescence; autocratic political control; weak domestic law enforcement; and easy access to illicit financial flows (Farrelly et al., 2022), as well as communities with long

standing traditions of trading in wildlife. The three jurisdictions that were selected for this study all have unique combinations of these components present, making them intriguing selections for drawing comparisons. One of the largest efforts to understand organised crime severities globally was through the creation of the Global Organized Crime Index as a valuable way to summarise and present information, identify trends, and to make comparisons across regions (GITOC, 2021). Countries were measured for "criminality" indicators based on the threat and potency of criminal markets and criminal actors, and "resilience" indicators based on the quality and efficacy of national resilience measures to counter organised crime. Indicators of resilience include the presence and effectiveness of mechanisms that countries have in place to combat organised crime, such as strong political leadership, prioritization of the issue, processes for international cooperation, specialised and trusted law enforcement units, and adequately resourced and independent judiciary, among others (see the Global Organized Crime Index Report and Supplementary Documents for more details on resilience measures). In 2023, South Africa was assigned a criminality score of 7.18 (increasing), and a resilience score of 5.63 (decreasing) (GITOC, 2023b). Canada was assigned a criminality score of 3.88 (increasing), and a resilience score of 7.21 (decreasing) (GITOC, 2023a). Hong Kong was assessed together with mainland China, which had a criminality score of 6.37 (increasing), and a resilience score of 5.67 (increasing) (GITOC, 2023c).

English is an official language in all three jurisdictions, therefore allowing one-on-one interviews to be conducted without the need for an interpreter, which may have helped

interviewees feel more comfortable being interviewed about a sensitive topic. Experts from various countries were also recruited for interviews to provide additional insights into the broader global context (e.g., United States, China, Nigeria, Mexico, Indonesia, the United Kingdom, Mozambique, and other regional and international experts).

Participants included adults (age 18+ years) who have first-hand knowledge and experience to understand and/or mitigate the illegal wildlife trade. Participants were not selectively included or excluded based on any attributes such as culture, religion, race, disability, sexual orientation, ethnicity, linguistic proficiency, gender or age. Participatory involvement of stakeholders was used in determining the final recommendations by consulting interviewees and members of the project network to help check assumptions and ensure suitability and feasibility.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 42362).

1.4 Outline of Dissertation

This dissertation is presented in 6 chapters including 4 stand-alone manuscripts (Chapters 2, 3, 4, and 5).

Chapter 1 provides an overview of the background context for the research, the structure of the thesis, the research questions and objectives, and broadly, the methodological approach taken to address the questions.

Chapter 2 provides the theoretical underpinnings to understand crime convergences and illegal wildlife trade based on synthesised interdisciplinary literature, discusses the various and diverging perspectives in the field, and outlines avenues for future empirical research.

Chapter 3 presents a scoping literature review that systematically collected and integrated information on crime convergences in the illegal trade of wildlife from multiple disciplines and evidence types, including peer-reviewed literature and grey literature reports.

Chapter 4 answers the question, "how does illegal wildlife trade converge with other types of organised crime activities?" This chapter uses responses from semi-structured interviews with law enforcement personnel and other experts to answer this question in three locations: South Africa, Hong Kong, and Canada.

Chapter 5 answers the question, "what are the challenges and opportunities for addressing organised illegal wildlife trade?" This chapter similarly answered this question using interviews with experts in South Africa, Hong Kong, and Canada, and identifies recommended solutions to improve responses to combatting wildlife trafficking.

Chapter 6 concludes the thesis by summarizing the main research findings, their implications, the original contributions of the thesis, study limitations, and the key conclusions.

Chapter 2

Synthesizing knowledge on crime convergence and the illegal wildlife trade

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2.1 Overview

The intensified illegal trade of wildlife has contributed to the unsustainable decline of wildlife populations, the de-stabilization of ecosystems, and threatens economic development and human security. Though often lacking empirical evidence, convergence theory has emerged recently as a topic of interest among researchers, practitioners, and the media to explain the growing overlap of criminal activities in an increasingly globalised world. In this paper, I explain the interdisciplinary theoretical foundations for the interconnectivity of criminal networks, including connections between illegal wildlife trade networks and non-state armed groups. I also outline and discuss various perspectives on the convergence of the illegal wildlife trade with other organised crime activities. I conclude by highlighting the urgent need for a better understanding of the role of the organised criminal groups involved in the illegal wildlife trade, and of how these groups converge with other types of criminal activities. The policy implications of filling in this knowledge gap are twofold: firstly, understanding how criminal networks converge can facilitate the implementation of more effective law enforcement and investigations that target high-profile offenders, as opposed to focusing on low-level poachers; and secondly, this understanding can foster more

cooperation across agencies and jurisdictions to address multiple crime types and crime in convergence settings.

2.2 Introduction

The trade of wild plants and animals has been a central part of human existence and inter-group relations since prehistoric times (Fuller et al., 2011). Wildlife has long been traded for food, clothing, shelter, medicine, entertainment, status symbols, ritualistic purposes, and for use in warfare (van Uhm, 2016). Historically, wildlife trade has often been conducted without serious harm to the natural environment or to people (van Uhm, 2016). However, the damages caused by the current over-exploitation and excessive, often commercial, trade of wildlife are complex and extensive, including the decline of wild animal populations, habitat destruction, spread of invasive species and diseases, animal welfare concerns, and threats to human security (Wyatt, 2013). Illegal wildlife extraction can disturb the delicate balance of ecosystems and deprive local communities of wildlife resources that provide subsistence, cultural, and spiritual benefits (Wyatt, 2013; Felbab-Brown, 2017). This rapidly growing industry also threatens social cohesion and economic growth, as people are deprived of their income-generating capacity (Gore et al., 2019).

The future losses in ecosystem services caused by one year of environmental crimes have been estimated to total to 568 billion USD, which is more than the estimated impacts of illegal drugs, human trafficking, excised goods, and counterfeits (Picard, 2013). Illegal wildlife trade (IWT) deprives governments of billions of dollars every year in legal

commerce and tax revenues (Gore et al., 2019; Nellemann et al., 2016). Transnational organised crime encourages the looting of national wealth by kleptocrats, and can even lead to economic stagnation as contraband is sold without any revenue for social services and development (Neumann, 2013).

Yet while the severity of the threats posed by drug, weapons, and human trafficking is long established in global policy dialog and processes, meaningful discussions about IWT have not taken place until recent years (Jacobson and Daurora, 2014; Wittig, 2016). Experts have noted that the persistence and extent of gaps in knowledge about the convergence between IWT and other forms of organised crime and corruption is an issue of grave concern, since IWT is thought to relate in some way to the trafficking of drugs, humans, and arms (Wittig, 2016; OECD 2018; Nellemann et al., 2018). Similarly, IWT likely converges with the same actors, fixers, facilitators, and convergence settings that are found in other illicit networks. Despite this, IWT is still given low priority by law enforcement (UNODC 2017). Limited efforts to date have evaluated the role of organised criminal groups in wildlife trafficking (Wyatt et al., 2020). Many claims about IWT convergences are based on anecdotal evidence, and there is no consensus in the literature on the degree to which IWT aligns with other organised crime activities, or on the mitigation measures that might be most effective (Wittig, 2016; Haenlein and Keatinge, 2017). Research is therefore needed to address these knowledge gaps. In this Perspective, I provide the theoretical foundations to understand crime convergences and IWT based on synthesised interdisciplinary literature,

discuss the current opposing perspectives, and outline clear avenues for future empirical research.

2.2.1 Brief overview of IWT offenders

There is no generalizable profile of IWT offenders that can be applied universally. Rather, people who engage in IWT can have a variety of motivations, demographic traits, and offending characteristics (Kahler and Gore, 2012; Nurse, 2013). At the poaching level, seminal research has found that the "typical" poacher operates individually, with a loose/informal network of buyers, rather than as part of an organised crime group (Warchol, 2004). Other research has shown that in some cases, people can be contracted to harvest wildlife by larger international trafficking networks which provide protection from law enforcement interference (Moreto and van Uhm, 2021). The nature of this relationship likely varies significantly depending on complex context- and species-specific characteristics (Moreto and van Uhm, 2021), and in some cases depending on the specific parts of the same species (Gore et al., 2021).

Further along the transnational IWT supply chain, Phelps et al. (2016), identified seven types of IWT intermediaries including logisticians, smugglers, colluders, unknowing third parties, processors, launderers, and vendors (Phelps et al., 2016). IWT offenders may also be broadly characterised as belonging to trading charities, mutual societies, business sideliners, criminal diversifiers, or opportunistic irregulars (Gore et al., 2021; South and Wyatt, 2011). Much remains unknown about international IWT intermediaries and their roles, although new

research suggests that the trafficking of wildlife products like ivory may follow the same modi operandi of urban stolen goods (Aggarwal, n.d.). Similar to the illegal drug trade (Shelley and Picarelli, 2002), the value of wildlife products increases at each segment of the network, with hunters receiving the least compensation, and the people who refine and market the commodities profiting the most. It is also important to note that much IWT takes place without crossing national borders. Domestic trade chains and markets can also be extensive and of significant conservation concern, even when not linked to sophisticated organised crime groups (Arias et al., 2021; Bullough et al., 2021; Daut et al., 2015; Wong and Lemieux, 2021). However, the rate of poaching of high-value wildlife, the immense size of individual shipments, and the high value placed on wildlife products, all indicate that sophisticated criminal networks are likely to be increasingly involved in international and intercontinental IWT (Wittig, 2016; Haenlein and Keatinge, 2017; Milliken, 2014; Nellemann et al., 2014; INTERPOL 2016; Wyler and Sheikh, 2008).

2.2.2 Contested views on transnational organised crime groups

Anxieties about the attributes of organised criminality are often expressed through a preoccupation with external '*others'* such as the Russian Mob, Italian Mafia, Japanese Yakuza, Colombian Cartels, and Chinese Triads (Lee, 2011). This thought process is based on the demonizing and alarming assumptions that these types of international criminals are fundamentally different from the 'rest of us' (Lee, 2011). Similarly, the groups involved in IWT have been described as "ruthless", "despicable," and "evil" (Massé et al., 2020). These

notions have policy implications for potentially undermining cooperation among agencies and states, and proponents of this stance can use it to justify funding expenditure and certain types of warfare-like policing approaches (van Dijk and Spapens, 2014). The reality is that transnational organised crime has fragmented and diversified well beyond these major players (Mandel, 2011). Though conventional thinking suggests otherwise, anyone can be attracted to the lure of profits from participating in illicit activities (Mandel, 2011). The global organised crime situation is further complicated by the expanding web of interconnections, collusions, membership diversification, and collaborations with corrupt governments and multinational corporations (Mandel, 2011).

To date, there has been little attempt to understand the extent to which the groups involved in IWT can be characterised as transnational organised crime groups (Moreto and Pires, 2018). It was not until the Doha Declaration was passed in 2015 that the United Nations General Assembly formally recognised IWT as a serious form of transnational organised crime (Wittig, 2016). A common notion that plagues debates about whether or not IWT is controlled by organised crime, is the erroneous assumption that 'organised crime' necessarily implies vertically integrated hierarchical structures, which is in fact not characteristic of many illegal industries (Felbab-Brown, 2017). Since the 1990s, a general trend among transnational organised crime networks has been to become less centralised, with more dispersed, adaptable, and fluid structures (Mandel, 2011). Even Colombian and Mexican drug traffickers, despite the journalistic emphasis on well-defined cartels and vertically structured corporate hierarchies, may in fact display increasing fragmentation, and fluid

social networks that can morph and react in response to market opportunities and regulatory constraints (Kenney, 2007; Garzón et al., 2013; Bagley and Rosen, 2015). Wildlife trafficking is likely no different, and may generally be the result of opportunistic collaborations among localised criminal networks, licit trade and logistics enterprises, and corrupt officials (Wittig, 2016). It is unlikely that highly centralised criminal groups in the traditional sense are involved in all IWT, and empirical research has found this is likely not the case for the illegal parrot trade in Bolivia and Peru (Pires et al., 2016). Even some of the largest ivory and rhino horn trafficking operations have been decentralised (Felbab-Brown, 2017). In short, there are many types of criminality in IWT, and although IWT supply chains can be highly organised, frequent offenders may have no formal ties with organised crime groups (e.g. Pires et al., 2016; Gore et al., 2021).

Regardless, some media and conservationists have adhered to the narrative that IWT is often controlled by "kingpins" at the top of hierarchical, vertically integrated criminal groups (Wittig, 2016). There have been several notable IWT networks that are in fact led by so called kingpins. Two well-known examples of IWT kingpins include Anson Wong, a Malaysian trafficker, and Vixay Keosavang of Laos, who are both alleged to have illegally traded in a wide variety of lucrative endangered species with the use of breeding farms, import-export companies, and/or private zoos as front companies (Felbab-Brown, 2017). Where IWT networks are in fact lead by kingpins, they may rely on intermediaries to buffer themselves from direct complicity in criminal transactions (Kenney, 2007). Transnational organised crime network leaders can use managers, recruiters, and brokers to outsource

services and shield themselves from investigations into illicit financial flows and communications with co-conspirators (Kenney, 2007). It is likely that the structure of IWT networks will remain diverse and constantly changing, just as the drivers of poaching and wildlife consumption do (Felbab-Brown, 2017). Attempts to categorize all wildlife traffickers as part of one type of group or network is incredibly limiting and likely not reflective of the reality and complexity of criminal relations (Campana, 2016).

2.3 Theoretical basis for crime convergence and IWT

2.3.1 Convergence theory

Transnational crime groups have benefitted significantly from globalization and advancements in information technology and online money transfer systems (Miklaucic and Brewer, 2013; Rabasa et al., 2017). Some criminal groups have now franchised to the extent that they are basically leaderless (Hesterman, 2013). The loose organization of networks minimizes the possibility of law enforcement penetration, presents an added challenge to identifying group leaders, and fosters a sense of entrepreneurship (Shelley and Picarelli, 2002; Picarelli, 2012). As such, transnational organised crime groups and non-state armed groups may have increasingly "flat" business structures, in contrast to the monopolistic and top-down hierarchical structure of mafia-type groups, and individual entrepreneurs may be more likely to collaborate as a result (Shelley and Picarelli, 2002; South and Wyatt, 2011). These trends have led to the increasing interconnectivity between criminal networks (Miklaucic and Brewer, 2013). Environmental crime, generally speaking, is reported to 'converge,' or overlap, with grand corruption, counterfeiting, drug trafficking,

cybercrime, human trafficking, financial crime, arms trafficking, and terrorism (INTERPOL 2016).

Van Uhm and Nijman (2020) use an environmental crime continuum as a framework to explain the convergence of organised crime groups with environmental crimes (van Uhm and Nijman, 2020). At one end of the continuum, specialised environmental crime groups and other organised crime groups can form alliances to share technologies, intelligence, and access to smuggling routes (van Uhm and Nijman, 2020). Criminal alliances within and between criminal groups are dependent on inter-personal networks, which may be based on ethnicity, nationality or family and kinship ties, as criminals are reluctant to conduct transactions with people with which they have not established trust (Kenney, 2007). The 'micro networks' that facilitate a criminal business process, such as trafficking a large amount of pangolin scales overseas, may exist for only one operation (van Dijk and Spapens, 2014). This is what Wyatt et al. (2020) refer to as a disorganised crime network, where wildlife can still be trafficked across continents, but the network is made up of opportunistic actors and entrepreneurs that only collaborate temporarily (Wyatt et al., 2020). Alternatively, this can develop into a more stable ongoing relationship if both groups continue to benefit mutually (van Dijk and Spapens, 2014).

A more evolved mutualistic relationship can involve long-term transactional convergence, or the sharing of resources and barter trade of contraband if the groups are involved in different markets and are not competitors (van Uhm and Nijman, 2020; USAID 2020). This can

further develop into the amalgamation of the two groups into one diversified criminal entity with hybrid characteristics (van Uhm and Nijman, 2020). An organised crime group may also completely abandon their previous illegal business to transform into one with a new focus predominantly on environmental crime (van Uhm and Nijman, 2020). At the final end of the continuum is the total domination and monopolization of an environmental crime supply chain, as an organised crime group outcompetes previous networks using violence, intimidation, or extortion (van Uhm and Nijman, 2020).

2.3.2 Crime convergences in IWT

Criminal networks can make use of their existing logistical infrastructure to become involved in IWT (Figure 2.1). For example, Chinese Triad groups who are known to be active in South African abalone trafficking have longstanding drug and human trafficking operations (Haenlein and Keatinge, 2017). Convergences are also clearly evident in rhino horn trafficking networks, whose actors are also thought to be involved in other types of serious crimes including drug and diamond trafficking, vehicle theft, armed robberies, and ATM crime (Fig. 1) (Hübschle, 2010; Milliken and Shaw, 2012). The smuggling routes for elephant ivory and African gray parrots largely overlap with those of timber and charcoal in Central Africa (UNEP 2015). Furthermore, similar smuggling methods are sometimes used for wildlife and other contraband (Utermohlen and Baine, 2017).

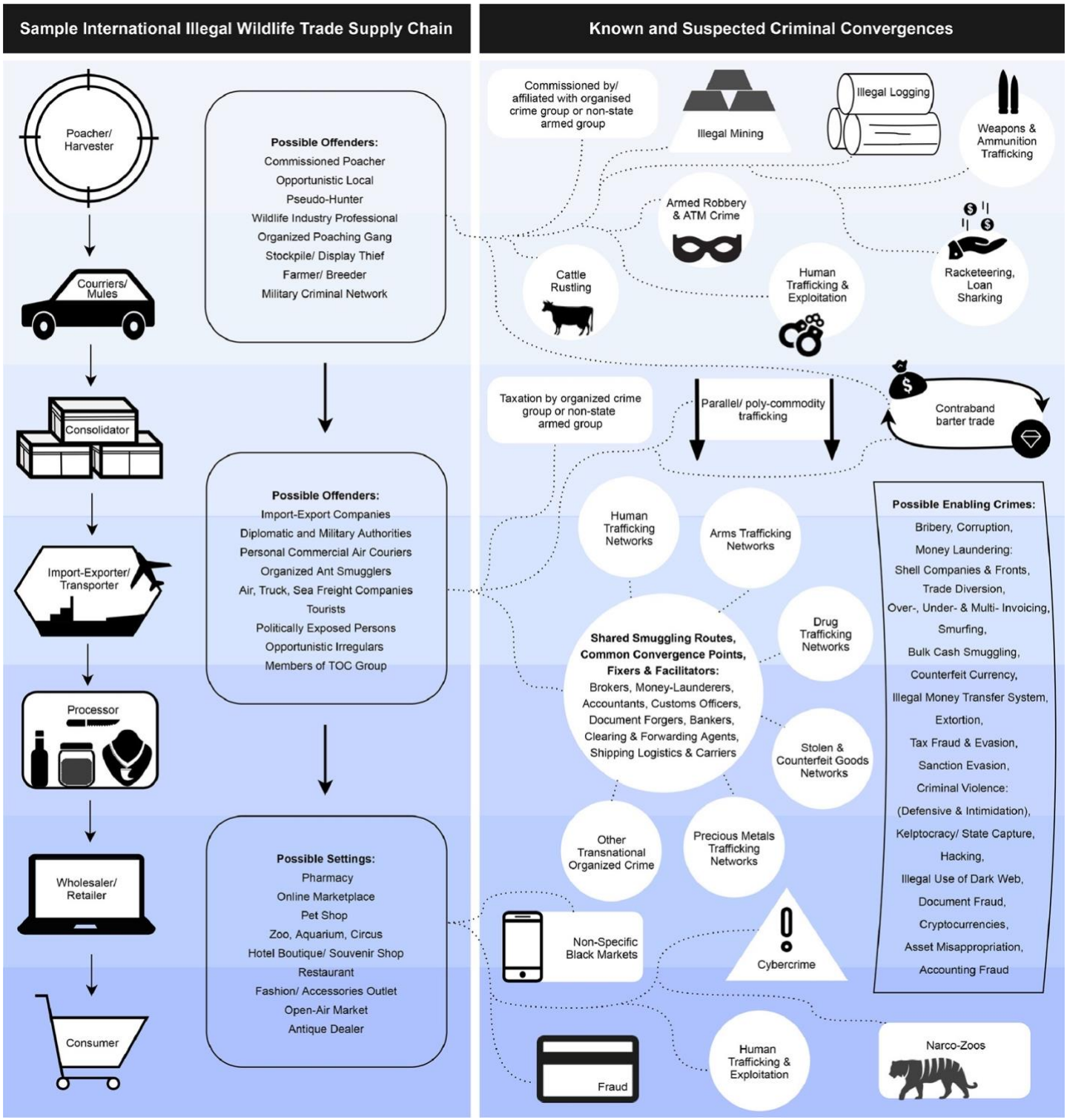

Sample International Illegal Wildlife Trade Supply Chain
Known and Suspected Criminal Convergences
Poacher/ Harvester
Couriers/ Mules
Consolidator
Import-Exporter/ Transporter
Processor
Wholesaler/ Retailer
Consumer
Possible Offenders:
Commissioned Poacher
Opportunistic Local
Pseudo-Hunter
Wildlife Industry Professional
Organized Poaching Gang
Stockpile/ Display Thief
Farmer/ Breeder
Military Criminal Network
Possible Offenders:
Import-Export Companies
Diplomatic and Military Authorities
Personal Commercial Air Couriers
Organized Ant Smugglers
Air, Truck, Sea Freight Companies
Tourists
Politically Exposed Persons
Opportunistic Irregulars
Members of TOC Group
Possible Settings:
Pharmacy
Online Marketplace
Pet Shop
Zoo, Aquarium, Circus
Hotel Boutique/ Souvenir Shop
Restaurant
Fashion/ Accessories Outlet
Open-Air Market
Antique Dealer
Commissioned by/ affiliated with organised crime group or non-state armed group
Illegal Mining
Illegal Logging
Weapons & Ammunition Trafficking
Armed Robbery & ATM Crime
Cattle Rustling
Human Trafficking & Exploitation
Racketeering, Loan Sharking
Taxation by organized crime group or non-state armed group
Parallel/ poly-commodity trafficking
Contraband barter trade
Human Trafficking Networks
Arms Trafficking Networks
Drug Trafficking Networks
Shared Smuggling Routes, Common Convergence Points, Fixers & Facilitators:
Brokers, Money-Launderers, Accountants, Customs Officers, Document Forgers, Bankers, Clearing & Forwarding Agents, Shipping Logistics & Carriers
Stolen & Counterfeit Goods Networks
Other Transnational Organized Crime
Precious Metals Trafficking Networks
Possible Enabling Crimes:
Bribery, Corruption,
Money Laundering:
Shell Companies & Fronts,
Trade Diversion,
Over-, Under- & Multi- Invoicing,
Smurfing,
Bulk Cash Smuggling,
Counterfeit Currency,
Illegal Money Transfer System,
Extortion,
Tax Fraud & Evasion,
Sanction Evasion,
Criminal Violence:
(Defensive & Intimidation),
Kelptocracy/ State Capture,
Hacking,
Illegal Use of Dark Web,
Document Fraud,
Cryptocurrencies,
Asset Misappropriation,
Accounting Fraud
Non-Specific Black Markets
Cybercrime
Fraud
Human Trafficking & Exploitation
Narco-Zoos

Figure 2.1. Conceptual diagram illustrating possible crime convergences that can occur along the international illegal wildlife trade supply chain. This is a simplified conceptualization and does not illustrate all of the complexities and variances in supply chains based on geography or species involved. For example, in some cases there can be multiple domestic couriers before or after wildlife contraband is exported internationally, and processing of wildlife contraband can take place prior to export, or at multiple nodes. The lists of actors and crimes included are not intended to be exhaustive. Note: ATM refers to automated teller machines, and TOC refers to transnational organised crime.

Organizations engaged in cross-border trafficking require physical and human assets to facilitate various illegal transactions along the way (Basu, 2014). Asset specificity refers to the degree to which an asset is re-deployable to alternative purposes without sacrificing productive value (Basu, 2014). Therefore, when assets are non-specific, convergences may occur. In the illicit economy, physical assets such as a truck with hidden compartments can serve a highly specific function (e.g. drug smuggling), which theoretically may also be used for multiple types of commodities (Basu, 2014). Specific human assets can include skills that are not easily imitable or transferable for another purpose, such as arms exportation specialists, or the ability to launder money (Kenney, 2007; Basu, 2014). Certain geographic sites can also be highly specific for an illicit network, such as a specialised habitat for an endangered species, which can also serve as an opportune location for illicitly cultivating drugs (Basu, 2014). In addition, operating expenditures and investments can be non-specific such as paying off corrupt police, or retrofitting traditional fishing trawlers into smuggling

vessels for illegal narcotics and, theoretically, wildlife products (Basu, 2014; Bergman, 2015). When assets are non-specific enough to serve dual purposes without increasing the operational risks and transaction costs of illicit activity, such as for such as concealment, evasion, and corruption (Basu, 2014), they can facilitate convergence points.

2.3.3 Fixers and facilitators

Multiple networks can share common nodes or convergence points for essential tasks (Fig. 1). The people working at these nodes may be referred to as "fixers," "super-fixers," "facilitators," "super-facilitators," "shadow facilitators," or "global guerrillas" (Miklaucic and Brewer, 2013; Rabasa et al., 2017; Shelley, 2014). Fixers and facilitators can be semi-legitimate accountants, investors, lawyers, bankers, technicians, and brokers who facilitate corrupt transactions and connect groups to the international market (van Dijk and Spapens, 2014; National Security Council 2011). Fixers may also be real estate agents, travel agents, customs officers, and politically-exposed persons (Neumann, 2013). These individuals are the intermediaries that bridge the poacher to the global marketplace (Farah, 2013). Brokers connect various groups in larger inter-group networks by making introductions and arranging transactions between them (Kenney, 2007). Fixers may not have loyalties to any particular criminal network, and may even be valuable to competing networks (Fig. 1) (Miklaucic and Brewer, 2013). They have the means to prepare front companies, offshore bank accounts, move weapons, and to obtain fraudulent international documents such as falsified flight routes, hunting licenses, end user certificates, fake passports, business registrations, bills of lading, CITES permits, and shipping licenses (Farah, 2013). Fixers know how to navigate

difficult markets, and make contacts that other members of the network may not have access to (Farah, 2013).

2.3.4 Convergence settings

"Convergence settings" is a term coined by Felson (2006) to describe physical locations where offenders meet, collaborate, exchange illicit goods, and plan future offenses (Felson, 2006). Convergence settings, such as a prison or local bar, can facilitate inter-group collaboration between organised crime groups (Felson, 2006; van Dijk and Spapens, 2014). Examples of convergence settings for illicit IWT services are bushmeat restaurants and illicit private zoos that also offer illicit sex work in Vietnam (Fig. 1) (Drury, 2011). In addition, there may be gender-specific IWT convergence settings, although more research is needed to better understand this (see Agu and Gore, 2020; Sollund, 2020). The existence of larger geographic locations that are especially susceptible to transnational organised crime have been acknowledged in the literature and have loosely been referred to as "geopolitical black holes," "twilight zones," and "pseudo-states" (Keefe, 2013). This refers to broader convergence settings occurring at the scale of cities, countries, or regions (Keefe, 2013) where law enforcement scrutiny is lax or nonexistent. These locations likely also have high levels of criminal autonomy, and political institutions which allow informal rules to prevail (Bagley and Rosen, 2015). Common convergence settings are thought to include diaspora communities, megacities, free-trade zones, and conflict zones (Shelley, 2014).

Transnational organised crime is often cultivated in areas of overlapping or contested sovereignty, including where three sovereign borders meet, such as the Tri-Border area where Argentina, Brazil, and Paraguay meet, or Southeast Asia's Golden Triangle (Keefe, 2013). Multi-border areas have constant and largely unregulated movements of people and commodities (Shelley, 2014). They are key hubs for informal and illegal economies and are prime locations for criminal networking (Farah and Babineau, 2019). Highly professionalised organised crime groups rely on smuggling "mules" who are often border residents or labourers who regularly cross the border (OECD 2019). Centuries old trade routes, networks, clans and tribes persist across borders, despite the creation of arbitrary state boundaries by colonial powers (Shelley, 2014). The ambiguity in jurisdiction and responsibility, lack of oversight, lax law enforcement, and rampant corruption foster an environment conducive to illegal activities (Shelley, 2014). These factors allow multi-border areas to become de facto free transit zones where commodities can be trafficked by air, waterways, or land, without interference (Farah and Babineau, 2019).

2.3.5 Legal-illegal convergence points

Corruption and gaps in staffing and institutional capacities at border areas allows for drug, human, and arms trafficking through border convergence points (Farah and Babineau, 2019; OECD 2019), and are likely also hotspots for IWT. Locations where consignments enter international transportation channels, such as airports, are vulnerable to corrupt ties, especially between traffickers and licit business enterprises such as those involved in legal wildlife trade (OECD 2018). Seaports often host the highest concentrations of corrupt

government employees, where customs officials commonly accept bribes to allow illegal imports and exports (Shelley, 2014). Customs and clearing agents, handling agents, and revenue officers can all be complicit in facilitating trafficking (Fig. 1) (OECD 2018). Licit businesses in convergence points that are particularly vulnerable to becoming corruption nodes include corporations offering clearing, forwarding, logistics, ground handling, and financial services (OECD 2018). Other nodes may include warehousing, shipping, container, or trucking companies that operate in high trafficking routes (e.g. Africa and East Asia; OECD 2018).

Increasingly, convergence settings can also be virtual (Soudijn and Zegers, 2012). Online wildlife offenders can converge virtually in countries lacking strong cybercrime legislation, especially pertaining to the online wildlife trade, and in countries that do not recognize the extraterritorial jurisdiction of another country that prohibits the online wildlife trade (Wingard and Pascual, 2018).

2.3.6 IWT and non-state armed groups

Generally speaking, the links between terrorism and organised crime likely vary dramatically by region, although there is a lack of empirical evidence on the subject (Hübschle, 2011). Previous studies have outlined a number of differences and commonalities between terrorism and organised crime, with discussions of a crime-terror nexus emerging in the 1990s (Hübschle, 2011; Picarelli, 2012). Collaborations can range from merging into a single hybrid organization, to a more distant relationship wherein one group indirectly influences

activities of the other (Picarelli, 2012). The opposing political beliefs and motivations between organised crime groups and violent non-state groups may make it unlikely for them to merge. While criminal networks aim to establish networks for illicit business and economic gains, warlords, insurgents, and rebels aim to defend or liberate the population to acquire power (Mandel, 2011). Terrorists aim to discredit and change the state using violence towards unnamed civilians. However, all still rely on the international illegal economy, making cooperation based on common interests a more likely possibility than other types of convergences (Hübschle, 2011). In addition, due to their trans-national nature, transnational criminal networks are thought to be less concerned with individual state contexts, which may make them likely to collaborate with terror groups (Neumann, 2013). For example, falcon traffickers from Russia have been suspected of funding terrorists in the Middle East where the falcons are destined (South and Wyatt, 2011).

Despite their distinctions, terror and organised crime groups can change over time to become more like one another (Mandel, 2011). The bigger threat to states may not be this cooperation, but rather the transformation of terror groups into more characteristically criminal ones to sustain their activities, or of criminal groups into groups that increasingly employ terror tactics and public violence to facilitate criminal activities, rather than relying on each other's cooperation (Hübschle, 2011). The distinctions that separate organised crime and terrorism can become muddled as actions begin to take the form of ‘political crime’ or ‘commercial terrorism’ (Picarelli, 2012). This process of melding behaviours has been termed “activity appropriation” (Neumann, 2013). Martin (2014) offers a model for

understanding this which includes traditional transnational organised crime groups that become politically motivated (rare), anti-state political insurgents and terrorists that increasingly become involved in criminal enterprise and illicit trades for profits, and narco-insurgencies that are the result of global demand for illegal drugs to the extent that successful organizations can challenge state officers with military technology and tactics (Martin, 2014). Nearly all terrorist groups are also involved in the drug trade for profits (Hesterman, 2013).

Much of the research on crime convergence has focused on the convergence of transnational organised crime and terrorism, and IWT is no exception (e.g. Haenlein et al., 2016, Neumann, 2013, Shelley and Picarelli, 2002). Recent years have seen increasing media attention and emphasis among academics towards the possible emerging relationship between poaching and terrorism, and more broadly between conservation and human security concerns (Haenlein et al., 2016). Although organised crime groups and terrorist groups ultimately have different goals, their interlinkages are extensive (Shelley and Picarelli, 2002). In addition, while natural resources are rarely the cause of violent conflicts, where governance is weak and demand is high, their extraction and sale can strongly influence and fund conflict (Douglas and Alie, 2014). Several of the most notorious armed insurgent and terrorist groups are thought to gain significant profits from IWT to fund their acts of violence (Fig. 1) (Wyler and Sheikh, 2008; Crayne and Haenlein, 2016). The huge profits from IWT may have attracted the involvement of the Janjaweed, Al-Qaeda-affiliated Jama'atul Mujahideen Bangladesh and Harkat-ul-Jihad-al-Islami, Lord's Resistance Army, Al-Shabaab,

Boko Haram, and other terror and resistance groups (Jacobson and Daurora, 2014; Haenlein et al., 2016; Douglas and Alie, 2014; Brashares et al., 2014; Felbab-Brown, 2018).

However, associating wildlife crime with human security threats can lead to severe human rights concerns and can escalate conflicts between local people and wildlife (Marijnen and Verweijen, 2016). Researchers have suggested that this narrative is largely over-stated and does not accurately reflect current evidence (Duffy, 2016). Many of the alleged links between organised crime and terrorism, in general, are only rumored with little empirical data to back them up (Moreto and Pires, 2018; Hübschle, 2011; Haenlein et al., 2016). In addition, the extent to which wildlife contributes to the running costs for any of the non-state groups purportedly involved in IWT remains unknown (Haenlein et al., 2016). Importantly, a number of official state militaries and paramilitaries have also been known to poach and traffic wildlife (Felbab-Brown, 2018). Another key consideration is that there is a tendency for media to use “ivory” and “wildlife” synonymously, when discussing links between IWT and conflict/terrorism (Crayne and Haenlein, 2016), and perhaps "rhino horn" and "wildlife" when discussing links between IWT and other trafficking activities. In short, IWT in general likely plays a small role in threat finance to non-state armed groups (Nellemann et al., 2018). A threat more serious than an IWT-terror nexus may be the relationship between IWT and other organised crime (Wittig, 2016), although this topic remains under-studied.

2.4 Arguments against convergence

Critics of the notion that most IWT converges with other types of human security threats and transnational organised crime argue that convergences are largely overstated, overly simplistic, and tend to be presented as a fact, yet backed with little evidence (Massé et al., 2020). The same is true for critics of supposed links between IWT and terrorism (Duffy et al., 2015). The treatment of IWT as a predominantly environmental issue has historically meant that it does not receive the same resources that are provided to countering weapons, drug and human trafficking (Jacobson and Daurora, 2014), and thus, critics contend that the IWT-crime convergence narrative has been exaggerated in order to attract finances and resources to combat IWT. In terms of international security, governments that are combatting political insurgents, violent conflicts, and terrorists receive assistance, such as security services and funding covertly from sympathetic governments (Martin, 2014). Conservation groups that wish to tap into these resources, can now use the [poorly evidenced] threat convergence dimensions of IWT to stress the seriousness of their case, and to gain access to the much larger sources of funding that are available for security measures (Haenlein et al., 2016).

The notion of fighting a "war" has long been the perspective on the approach needed to solve the problem of illicit markets (Picard, 2013). Recent years have seen a dramatic shift towards wildlife conservation growing increasingly implicated in advancing a global security agenda (Duffy, 2016; Duffy, 2014). "War for biodiversity" and "poachers-as-terrorists" narratives have emerged to suggest that military-style anti-poaching efforts are needed to protect

biodiversity, and that sometimes the people undertaking illicit hunting of wildlife are the same people involved in acts of terror (Duffy, 2016; Duffy, 2014). Some authors contend that this discourse has severely harmful implications for the local communities who live with wildlife (Duffy, 2016). Other points of criticism include that it fails to account for the colonial legacy of traditional hunting practices that are now criminalised as a result of this narrative; it does not differentiate between commercial and subsistence poachers; and it fails to mention the well-documented yet often overlooked involvement of states and government armies in large-scale poaching (Duffy, 2016).

2.5 Perspectives on IWT, conflict, and security

Although the narrative of IWT converging with other organised crime and non-state armed groups is poorly evidenced, it does not necessarily mean the threats are not real. IWT can impact violent conflicts, as the mass extraction of high-value wildlife can be done more efficiently than the extraction of other high-value resources (Douglas and Alie, 2014). In some cases, wildlife may serve a specialised role as a form of currency for the illegal exchange (or barter trade) of commodities by terrorist and criminal organizations (Wyler and Sheikh, 2008; van Uhm and Nijman, 2020; Karanja, 2012). Where poaching is used to fund militias and rebel groups, bottom-up approaches will be difficult, if not impossible, to implement since communities in conflict areas have already lost the value of wildlife that typically accrues from tourism (Duffy and St John, 2013). Even after peace agreements are made in post-conflict zones, non-state groups can be reluctant to relinquish control over

valuable natural resources and continue to operate their illegal trades (Nellemann et al., 2014).

The concept of security has grown among some academics and policymakers to include non-military threats (Hough et al., 2015), such as IWT (Elliott, 2016). Importantly, securitization can be defined as the process when a threat is perceived as serious enough to warrant priority attention and the diversion of government resources to minimize its impact, and is thus a matter of social construction (Hough et al., 2015). Traditional realist views on security are state-centric and contend that non-military issues should not be securitised, while critical approaches have adopted a broadened perspective which includes environmental issues as key factors relating to food security, human health, natural disasters, economic stability, and political stability (by aggravating violent conflicts) (Hough et al., 2015). For scholars who subscribe to traditional state-centric and militarised views of security, IWT may only be considered a security threat where it relates to terrorist groups, insurgents, and rebel militias. Other scholars may agree that IWT poses a threat to human security, but resist securitization of the issue because of the possibility that it may lead to inappropriate militaristic responses such as the deployment of armed forces (Hough et al., 2015; Elliott, 2016). Yet despite the trajectory that many anti-IWT efforts are currently on (OES 2020), accepting IWT as a security issue does not by definition necessitate the use of armed military forces. There is no ‘one-size-fits-all’ solution to solving this large-scale problem and governing these complex human–environment interactions (Duffy et al., 2015). Regardless of whether or not the links between international security and IWT have been exaggerated in a few examples, it will be

important going forward to continually document and deconstruct this relationship in order to better understand the convergence of threats to environmental and human security.

2.6 Implications

A broad three-pronged approach may be necessary to stop international IWT, including strengthening enforcement, reducing demand, and building international cooperation (OES 2020). Research aimed at understanding crime convergences in IWT has implications for two of the three pillars: strengthening enforcement and building cooperation. Firstly, convergence research will contribute to a better evidence base for more sophisticated criminal investigations to disrupt wildlife trafficking, and help inform fair approaches where communities no longer suffer from harsh efforts to stop IWT. Secondly, understanding crime convergences may contribute to heightened government capacities to adopt more collaborative approaches and recognize IWT as a complex issue involving a variety of serious offences committed throughout its operating network. The previous longstanding approach of researching and countering each type of transnational organised crime separately may not be sufficient to meet the challenges posed by the convergence of criminal networks.

2.6.1 Strengthening enforcement: targeting intermediaries, not just poachers

The lack of understanding of the multi-level role of sophisticated criminal networks in IWT has led to the ongoing criminalization of people who act at the lowest level (hunting/ harvesting), who receive the least compensation, and who are often living in chronic multidimensional poverty (Anagnostou et al., 2021). However, in the hierarchy of IWT

offending, poachers are arguably the least 'blameworthy,' as poverty, social exclusion, inequality, and marginalization are often the main rationale for their actions (Wyatt, 2013; Anagnostou et al., 2021). Both the militarization of conservation and the criminalization of hunting and trading wildlife are elite-driven processes that can further marginalize and impoverish vulnerable local communities (Elliott, 2016). The gap in knowledge on the links between IWT and other organised crimes is impeding efforts for approaches where anti-IWT efforts are treated with the same level of importance as other serious crimes, and involve advanced investigations to target higher level, powerful criminal actors. Law enforcement interventions that aim to dismantle international trafficking networks, but that target only local criminal groups can inadvertently radicalize them and exacerbate criminal activity (Garzón et al., 2013). When IWT is treated as a serious crime, approaches to stop it can include applying current investigative and forensic technology to identify suspects, and engaging with financial intelligence units to disrupt illicit financial flows (Esmail et al., 2020). The technology and policy tools that can be used in criminal investigations to identify suspects, and to track and freeze assets from trafficking activities already exist, yet are rarely applied to IWT (UNODC 2012). 79% of jurisdictions across Asia-Pacific reported that they do not include financial intelligence units in their approach to combat IWT (UNODC 2017). In response, financial institutions could implement heightened anti-wildlife trafficking regulatory measures to flag international transactions, and collaborate with law enforcement to seize criminal assets and convict intermediaries (Wyler and Sheikh, 2008). Preventative measures are needed at the local level that are based on a nuanced understanding of local hunting and trafficking conditions, combined with

strengthened multilateral initiatives such as for policing, intelligence-sharing, and regional capacity in criminal justice systems (Garzón et al., 2013). Therefore, in addition to better policies to protect wildlife and disrupt illegal trade, convergence research will support global efforts to improve law enforcement, environmental justice, and policies to protect vulnerable people in rural areas.

2.6.2 Building cooperation: "it takes a network to defeat a network"

IWT may be considered a wicked problem. Wicked problems involve contrasting values and attitudes, require intersectoral action, can be symptoms of other problems, have their own numerous overlapping subsets of problems, and ever-changing requirements in how they should be addressed (Mitchell, 2018). These attributes highlight significant challenges to governance and law enforcement. IWT networks are adaptive, as their behavior mutates and re-organizes through careful risk calculations, and in response to changing circumstances to maximize their chances of success and survival (Neumann, 2013). The flexibility and fluidity of transnational criminal networks is thought to be their single greatest advantage for seizing global opportunities based on changing authority structures (Mandel, 2011). As crime is responsive to a visible police presence in 'hot spots' (Chalfin and McCrary, 2017), resources can be specifically targeted to support law enforcement in convergence locations. However, solely intensifying law enforcement efforts will not address the systemic root causes of a lot of IWT (such as poverty and inequity). Proactive collaborative efforts are also needed to engage communities in anti-IWT efforts (Anagnostou et al., 2020), spread awareness of conservation issues and rules; foster a sense of responsibility for wildlife and trust of local

authorities; and crucially, to co-develop solutions for socially sustainable livelihood alternatives (see Anagnostou et al., 2021 for a more in-depth discussion). Furthermore, where state-level anti-trafficking capacities increase, highly motivated traffickers are able to displace their activities into neighboring countries and jurisdictions (Shaw, 2014). Due to the rise of complex transnational organised crime, sovereign force will not be enough to maintain law and order (Hough et al., 2015). The solution may require considerable and sustained investment of resources to strengthen systems for regional enforcement and prosecutions of fixers and facilitators (Shaw, 2014). States must collaborate on their regulatory frameworks, and legislative and judicial processes, including those that share borders or species populations (Piper, 2014). Given the advantages of network structures for criminal organizations, communities, states, and multilateral organisations must respond with networks of their own, rather than static hierarchical alternatives (Jacobson and Daurora, 2014; Shelley and Picarelli, 2002).

2.7 Conclusion

Despite IWT being one of the largest transnational organised crime industries worldwide, significant shortcomings have persisted in institutional frameworks to stop IWT. If crime convergences are extensive, major transnational criminal activities such as the trafficking of drugs, humans, arms, and wildlife, may require more unified treatment. New approaches have proven effective in using multi-jurisdictional collaborations that address multiple crime types, such as stopping IWT by disrupting arms trafficking networks (Austin, 2019). Addressing converging crimes necessitates extensive cross-government and cross-agency

coordination (Pink and White, 2016). Successful enforcement will require vertical and horizontal collaboration networks that value local knowledge, share ideas and expertise, set protocols for information sharing, and adapt to differences (Pink and White, 2016).

Given the variety of possible crime convergences (i.e., geographic convergence, contraband barter trade, parallel trafficking, common fixers, shared smuggling routes, crime group diversification, threat finance, etc.; see Fig. 1), and the complex nature of IWT, certain types of convergences will be more common than others depending on the actors, products, stages, and resources involved (Moreto and van Uhm, 2021). Therefore, blanket statements about the general convergence of international IWT and organised crime groups and/or non-state armed groups will not be productive until more empirical research is done to understand the nuances of these relationships. Future research is needed to further develop the definition of crime convergence, and to ground in empirical research the possible subtypes in the context of IWT. Important questions remain unanswered, including: what other illegal activities co-exist with IWT; what are the key characteristics of convergences in IWT; how do convergences differ along the supply chain, and by the wildlife being traded; and how is convergence changing over time? Informed by interdisciplinary research, the international community must work together to build networks which can improve the implementation of anti-IWT programs at all stages of the supply chain, close gaps in legislation, reduce vulnerabilities, and address the systemic shortcomings.

Chapter 3

Illegal wildlife trade and other organised crime: A scoping review

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3.1 Overview

The global illegal wildlife trade has been anecdotally linked to other serious crimes, such as fraud, corruption, and money laundering, as well as the cross-border trafficking of drugs, arms, counterfeit goods, and persons. As research on this topic is scarce and sporadic, I conducted a scoping literature review to gather information across multiple disciplines and evidence types on crime convergences in the illegal wildlife trade. I reviewed 150 papers published between 2000 and 2020. I found that the illegal trade in many of the most frequently trafficked species have reportedly converged with numerous other serious and organised crimes, most commonly drug trafficking. Convergences can occur in a variety of ways, although the diversification of organised crime groups, parallel trafficking of contraband, and use of enabling crimes (such as corruption and violence) were the most frequently described. Possible explanations for the results and future research directions are discussed.

3.2 Introduction

Transnational organised crime is recognised as an escalating issue within the global conservation community, with criminal networks expanding their reach to all corners of the

world and becoming increasingly difficult to eradicate (Rabasa et al. 2017). The illegal wildlife trade is one of the most lucrative global criminal enterprises (Nellemann 2016). Given the difficulties associated with measuring criminal activity, particularly wildlife crime, there is no certainty regarding the true scale and value of illegal wildlife trade (‘t Sas-Rolfes et al. 2019). Although it is difficult to accurately measure the scale and value of wildlife that is traded illegally, the consequences of the trade are extensive (Picard 2013). The ongoing looting of wildlife to supply illicit supply chains is contributing to the deterioration of the environment and the destruction of endangered habitats, the erosion of good governance and losses in biodiversity, and can harm livelihoods, public health, animal welfare, and global industries that rely on healthy environments (Wyatt 2013). In addition, current responses to counter illegal wildlife trade may be insufficient, and may even have perverse effects that exacerbate criminal activity (Picard 2013; Anagnostou 2021). As a result, populations of various species have declined significantly, some even to extinction (e.g. Tella and Hiraldo 2014; McClenachan et al. 2016). Modern wildlife contraband may include live pets, trophies, jewelry and fashion accessories, cultural artifacts, traditional medicine, and wild protein for human consumption. Some of the taxa most commonly included in discussions about illegal wildlife trade include elephants, rhinoceroses (henceforth referred to as “rhinos”), pangolins, bears, big cats, birds, great apes, turtles and tortoises, and eels, among many others (UNODC 2020).

The United Nations Security Council has established that there is a growing convergence of criminal activity and illicit markets (de Boer and Bosetti 2015). Scholars have recently begun

to provide a theoretical framework to explain crime convergences in environmental crimes (van Uhm and Nijman 2020, Moreto and van Uhm 2021, van Uhm et al. 2021, Anagnostou 2021). Convergences may range from the occasional involvement of organised crime groups in environmental crimes, to their complete domination over environmental crimes (van Uhm and Nijman 2020). As one specific type of environmental crime, illegal wildlife trade has been anecdotally linked to other serious crimes, and the cross-border trafficking of other illicit commodities (Felbab-Brown 2018; OECD 2018; Nellemann 2018). Importantly, while not all illegal wildlife trade is highly organised, little is known or agreed upon regarding how much of illegal wildlife trade can in fact be characterised as transnational organised crime (Anagnostou 2021). Though the illegal wildlife trade presents a major challenge to conservationists and environmentalists aiming to protect biodiversity, applying interdisciplinary research and incorporating theory and concepts from crime science and criminology is essential to better understand the nature of this illegal industry and how best to stop it. However, research on this topic is extremely limited and few studies have assessed what species in illegal wildlife trade converge with which other serious and organised crimes, which species are trafficked by transnational organised crime groups, and where convergences are occurring globally. As an initial step towards piecing together these linkages, I conducted a scoping review to gather information on crime convergences in the illegal trade of wildlife from multiple disciplines and evidence types. The scope of the present study is limited to wild fauna, including terrestrial and aquatic vertebrates and invertebrates.

3.3 Methods

3.3.1 Data Collection

We searched online resources for English language publications published between December 2000 to January 2020. This ensured that long-term trends could be uncovered and the evolution of the concept of convergence could be traced. December 2000 was chosen as the start date as this was the year that the United Nations General Assembly adopted the Palermo Convention, or the United Nations Convention against Transnational Organized Crime (UNTOC), which currently has 190 States Parties. While wildlife trafficking is not the key focus of the convention, Palermo was a turning point for understanding transnational organised crime as it produced definitions of relevant terms such as "trafficking," "confiscation," and "organised crime." It also provided validation that transnational organised crime is an urgent issue that requires global cooperation.

3.3.2 Search Strategy

We identified peer-reviewed papers using 6 online databases including Web of Knowledge (n=69), Scopus (n=119), Google Scholar (n=624), ProQuest (n=73), Dow Jones Factiva (n=93), and Nexis Uni (n=90). I also identified additional grey literature reports from websites for 57 of the main international organizations and coalitions related to wildlife trafficking control and monitoring (Table 3.1). I included organizations that focus on understanding and combatting general transnational organised crime.

Table 3.1. List of relevant organisations searched for grey literature publications.

ADM Capital Foundation

African Wildlife Foundation

Animal Protection Agency

Bird Life International

Born Free Foundation

Brookings Institute

Center for Advanced Defense Studies

Chatham House

Cheetah Conservation Fund

Center on Illicit Networks and Organized Crime

Coalition against Wildlife Trafficking

Conservation International

Convention on International Trade in Endangered Species of Wild Fauna and Flora

David Shepherd Wildlife Foundation

Defenders of Wildlife

Earth League International

EcoAmericas

ENACT - Enhancing Africa's ability to Counter Transnational Crime

International Fund for Animal Welfare

International Institute for Environment and Development

International Otter Survival Fund

International Primate Protection League

Interpol

Natural Resources Defense Council

Orangutan Foundation

Organisation for Economic Co-operation and Development

Oxpeckers

Pan African Sanctuary Alliance

Panthera

People not Poaching

RHIPTO - Norwegian Center for Global Analyses

Royal United Services Institute

Royal Society for the Protection of Birds

Save the Elephant

Species Survival Network

The World Bank

TRAFFIC

United Nations Environment Programme

Endangered Species International

Environmental Investigation Agency

Europol

Freeland Foundation

Global Environment Facility

Global Initiative

Humane Society International

Illicit Trade News Network

InSight Crime

International Union for Conservation of Nature

Institute for Security Studies

United Nations Office on Drugs and Crime

WildAid

Wildlife Conservation Society

Wildlife Justice Commission

World Animal Net

World Customs Organization

World Society for the Protection of Animals

World Wide Fund for Nature

The search query consisted of terms identified by the authors to describe illegal wildlife trade, the concept of crime convergence, and other organised crime activities. The search strategy was customised for each academic database and grey literature website. A sample search strategy can be found in the Appendix (Table S1).

3.3.3 Screening Articles

The (n=654) reports were screened using pre-defined inclusion and exclusion criteria. The first inclusion criteria were documents that focused on the illegal wildlife trade and also mentioned trafficking convergence with other types of illegal goods. Therefore, papers were included if their title, abstract/ summary, key words, or main text mentioned the following

terms/ concepts: illegal wildlife trade, wildlife trafficking, wildlife crime, or wildlife smuggling. In additional, the included papers must have also either mentioned convergence, nexus, mixed seizure, or cooperation, or referred to any of the following: contraband, drugs, narcotics, arms, weapons, electronics, cars, household items, counterfeit products, timber, plants, antiquities, artefacts, stones, foodstuff, piracy, commercial goods, human trafficking, migrants, human smuggling, medicine, alcohol, tobacco, money laundering, cybercrime, terror financing, fraud, or illicit commodities, in relation to illegal wildlife trade. As I limited the scope of the search to identify crime convergences in the illegal trade of wild fauna, I did not include reports of convergences between timber trafficking and other organised crime activities. However, I included convergences that were reported between the illegal trade in wild fauna and timber trafficking (as a separate type of organised crime).

The second inclusion criteria were documents that focused on the international trafficking of other commodities and also mentioned the illegal wildlife trade. Therefore, papers were included if their title, abstract/ summary, key words, or main text mentioned the following terms/ concepts: illicit trade, trafficking, transnational organised crime, illicit markets, transnational crime, global organised crime, criminal networks, cross-border crime. This set of included papers must have also either mentioned convergence, nexus, mixed seizure, or cooperation, and referred to any of the following wildlife trade terms: wildlife, wildlife crime, wildlife smuggling, wildlife trafficking, illegal wildlife trade, animals, pets, fauna, ivory, pangolins, rhinos, poaching, birds, reptiles, fur, leather, bones, environmental, tigers, mammals, seafood, or conservation, in relation to other organised crime.

Documents published between 2000 and July 2020 were included. My allowable document types for my grey literature searches included reports from think tanks, inter-governmental organisations (IGO), non-governmental organisations (NGO), law enforcement organisations, and industry, as well as government documents, policy literature, evaluations, newsletters, and transcribed speeches. I excluded results that were in the format of conference abstracts, theses, or videos; papers that mentioned only the illegal trade of wildlife or derivative products; and papers that only mentioned the illegal trade of non-wildlife commodities. I did not conduct critical appraisal of included documents given the exploratory nature of the study, and the nature of crime reporting. The articles were then gathered and de-duplicated in Zotero, a citation management software. The remaining (n=205) articles were selected for detailed full-text reading and further screened into n=106 publications. I then reviewed the reference lists of the 106 publications to identify any further citations and potentially relevant results. This resulted in a list of 92 additional papers, which were then screened using the same inclusion and exclusion criteria discussed previously. After screening these additional papers, 44 were chosen to be included in our final results. Therefore, the total number of papers included in the literature review was 150 (see Figure 3.1).

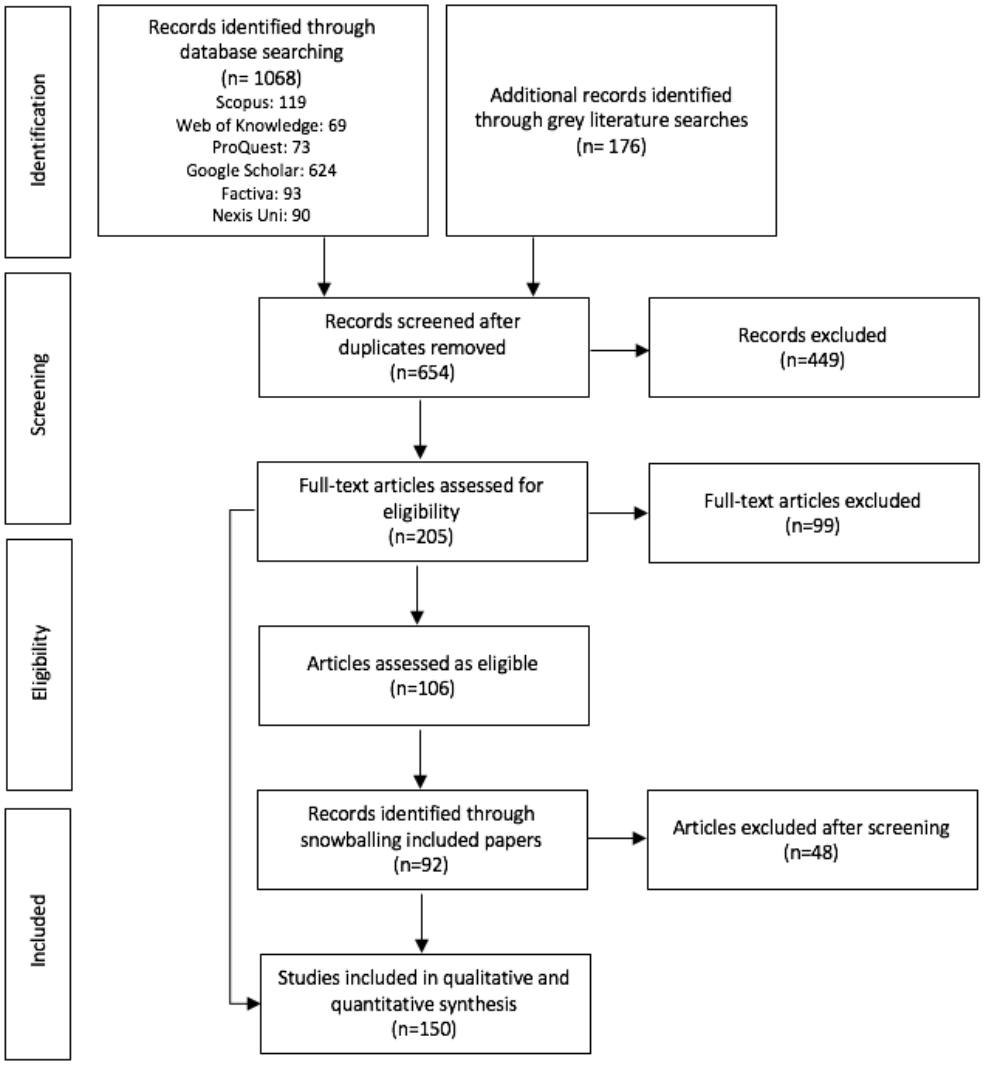


Figure 3.1. Modified PRISMA flow diagram of my systematic scoping review (Moher et al. 2009).

3.3.4 Data Extraction

Our extracted data included the publication year, author, title, publisher, URL, the type of evidence and type of publication, whether the authors used the term “convergence” in the

context of overlapping criminal activities, and the details of reported convergences. The details of convergences included the location of the convergence, the type of wildlife product or taxa involved, the other illicit crimes and commodities involved, the type of convergence (taxation, barter trade, parallel trafficking, bonded labourers, common fixer, geographic convergence, shared smuggling routes, diversification, high-ranking criminal consumer, threat finance, enabling crimes), and quotes from the source of the original description of the convergence. As many publications reported multiple types of convergences, the number of convergences that were extracted is greater than the number of papers included.

A Geography Librarian and a Political Science Librarian were consulted while preparing the literature searches. Information is presented as a synopsis of the results followed by an explanation of key findings.

3.3.5 Definitions

For the purposes of this article, I used the following conceptualisations for the various types of convergences that were included in the results:

- Barter Trade occurs when wildlife contraband is exchanged with other illicit commodities in a cashless transfer of illegal goods.
- We considered that a Common Fixer is an individual, rather than an entire criminal group or network, who serves an essential intermediary role in the illegal supply chain for illegal wildlife trade and other criminal networks.

- We use Diversification as a broad term to describe when an organised criminal group/ network has chosen to become involved in illegal wildlife trade along with, or instead of, their other organised criminal activities.
- Enabling Crimes are any crime that further empowers criminal organizations to grow and prosper. This includes criminal violence, corruption (petty and grand), illicit financial flows, fraud, forced labour, and arms trafficking when it is for the purpose of hunting to supply illegal wildlife trade supply chains.
- We considered Forced and Bonded Labourers as instances when people who are victims of human trafficking and modern slavery are forced to be perpetrators of illegal wildlife trade in order to pay off a debt or through threat of punishment.
- Geographic Convergence occurs when two organised crime activities commonly occur in the same physical location.
- High-Ranking Criminal Consumers are a type of convergence wherein the end user of illegally traded wildlife is an offender with an important position and/or leadership role in a crime network that is involved in other transnational organised crime, and typically uses wildlife as a status symbol.
- Parallel Trafficking occurs when multiple types of contraband are smuggled together in the same shipment by the same individuals.
- Shared Smuggling Routes are trafficking routes or pathways that are used for more than one illicit commodity.

- We consider Taxation as the convergence when territorial criminal groups impose a ‘tax’ for other illicit groups to traffic in wildlife through a territory or port that they control.
- Threat Finance occurs when illegal wildlife trade is used to fund non-state armed groups including terrorists, militias, and insurgents.

We also refer to the broad definition of organised crime provided by the United Nations Convention against Transnational Organized Crime, which states that an organised crime group is a "structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences… in order to obtain, directly or indirectly, a financial or other material benefit" (United Nations 2004). I also consider that the illegal wildlife trade can be defined as, "when committed intentionally, the trafficking in any specimen, knowing that the specimen was taken, possessed, distributed, transported, purchased or sold in contravention of: (a) Any international agreement concerning or relating to the protection, conservation, management, trade or use of wild fauna or flora binding on the State Party; or (b) Any applicable domestic or foreign law concerning the protection, conservation management, trade or use of wild fauna or flora" (End Wildlife Crime 2020).

I used aggregate data for my analysis to better identify patterns in the dataset. For example, leopards and tigers were grouped into “Big Cats,” while methamphetamine trafficking and marijuana trafficking were grouped into “Drug Trafficking.” I entered the extracted data into

a Microsoft Excel spreadsheet and visualised it using Python in Jupyter Notebook. The guide to data aggregations I used can be found in the Supplementary Information (Table S2).

3.4 Results

Research attention on crime convergences in the illegal wildlife trade increased dramatically in 2016 (Figure 3.2). The concept of illegal wildlife trade converging with other types of transnational organised crime is a narrative that recently became cemented during the 2018 London Illegal Wildlife Trade Conference (Massé et al. 2020). More than half (n=90) of papers reporting on convergences since the year 2000 were published between 2016 and mid-2020. Only 40 papers from my results actually used the term, 'convergence', often opting for more vague terms such as 'links to,' 'connects to', 'relates to,' or 'overlaps with,' suggesting that more research is needed to conceptualize and define the term “crime convergence.” In addition, most of the papers in my results are grey literature reports, while only 22 are peer-reviewed studies (Figure 3.2).

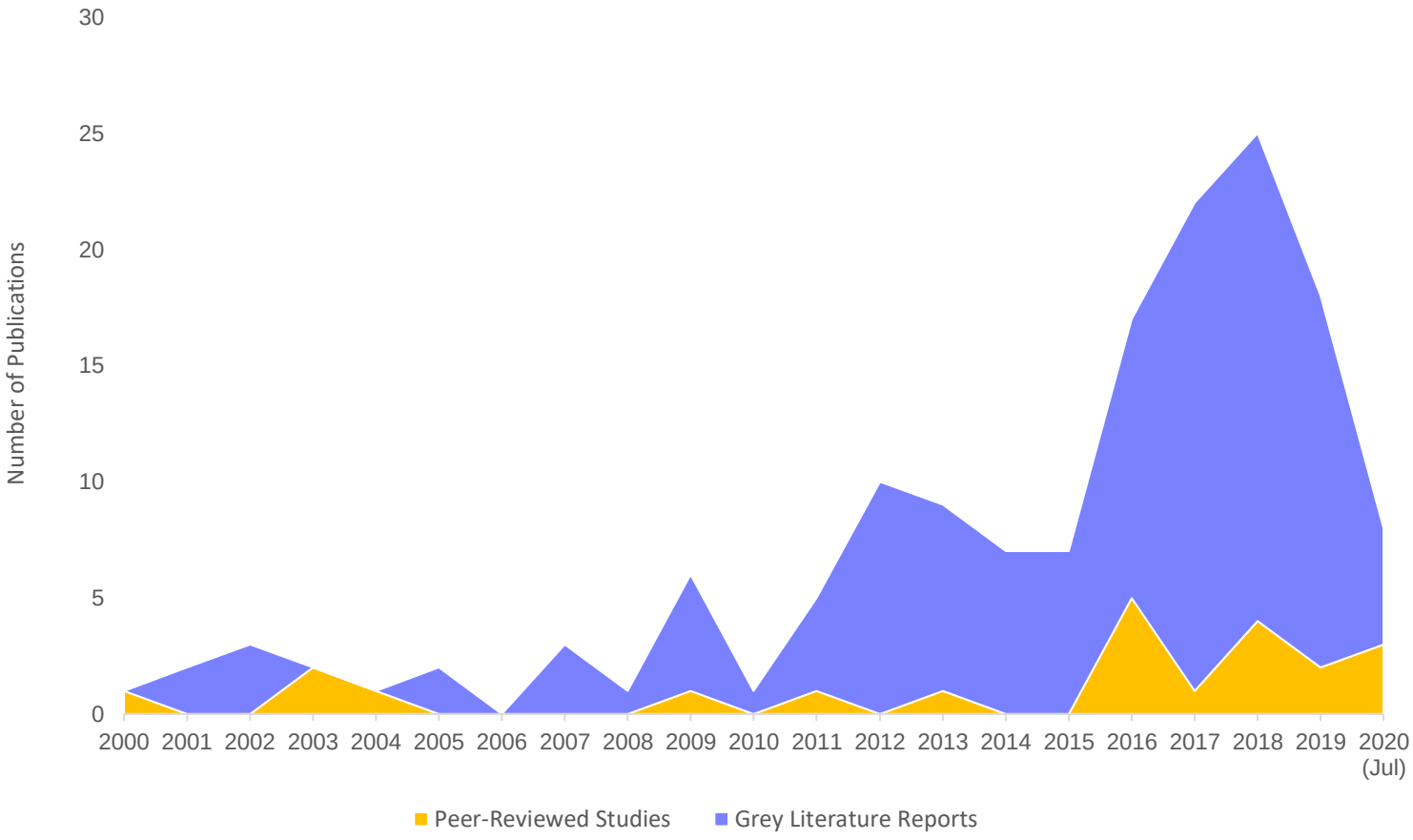


Figure 3.2. Evolution of research interest on the topic of crime convergence and the illegal wildlife trade over the past two decades, and the disparities between peer-reviewed and grey literature reporting.

3.4.1 Wildlife Taxa Involved in Crime Convergences

According to the literature, convergences have occurred in the trafficking of a variety of species and wildlife products (see Figure 3.3). I grouped these into the following categories: abalone (n=107), animal skins (n=8), apes (n=40), armadillo (n=1), bears (n=13), big cats

(n=65), birds (n=97), caviar (n=26), deer (n=6), fish (n=134), terrestrial invertebrates (n=12), ivory (n=317), live animals and exotic pets (n=8), marine invertebrates (n=23), monkeys (n=12), not specified/ 'wildlife' in general (n=293), civets (n=3), pangolins (n=45), reptiles and amphibians (n=108), rhino horn (n=265), antelope (n=2), vicuñas (n=2), and cetaceans (n=4). Full details on aggregations are available in the Supplementary Information (Table S2).

3.4.2 Other Crimes that Converged with Illegal Wildlife Trade

The other serious and organised criminal activities that illegal wildlife trade converged with were grouped into the following categories: arms, weapons, ammunition and parts trafficking ('arms trafficking'; n=115), bulk cash smuggling and counterfeit currencies ('cash smuggling'; n=17), contraband trafficking (general) ('other contraband'; n=57), corruption (petty and grand) (n=64), counterfeit goods trafficking ('counterfeit goods'; n=134), use of counterfeit, forged, and fraudulent documentation ('fraud'; n=35), criminal violence (incl. homicide, torture, rape, assault) ('criminal violence'; n=62), drug trafficking (n=365), food and agricultural goods trafficking ('agri. goods trafficking'; n=36), fraud (n=33), illegal logging and timber trafficking ('timber trafficking'; n=70), illegal mining and trafficking in minerals, metals, and gemstones ('mined goods trafficking'; n=109), money laundering, tax evasion, and other illicit financial flows ('financial crime'; n=106), non-state armed groups (incl. terrorist, militias, and insurgents) ('armed groups'; n=88), involvement of another type of transnational organised crime group ('organised crime group'; n=76), other serious and organised crime (n=23), racketeering (incl. banditry, extortion, kidnapping for ransom,

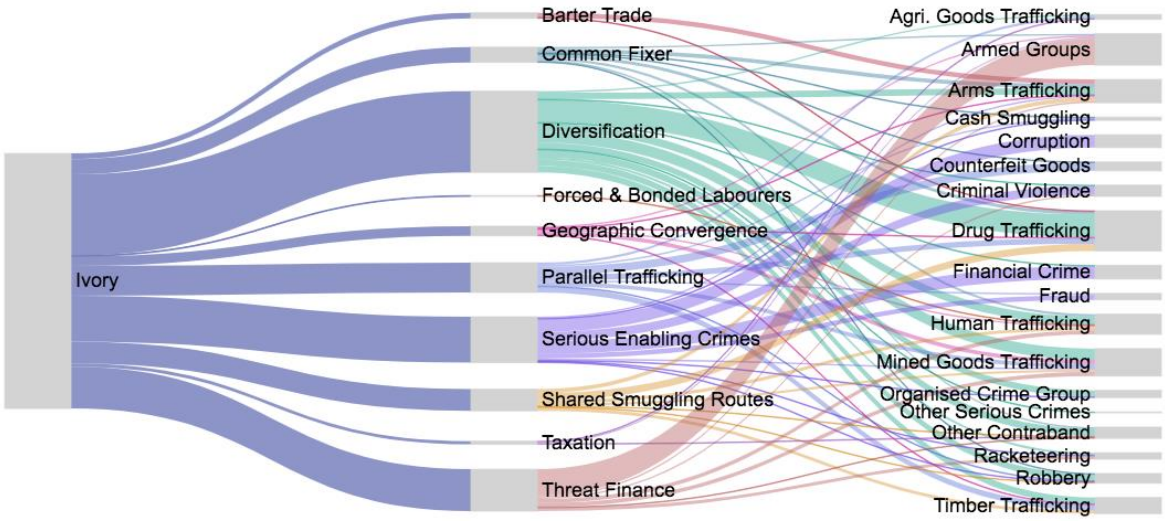
gambling, and loansharking) ('racketeering'; n=37), theft, organised robbery, and stolen goods ('robbery'; n=59), and trafficking in persons and migrant smuggling ('human trafficking'; n=105).

3.4.3 Types of Convergences

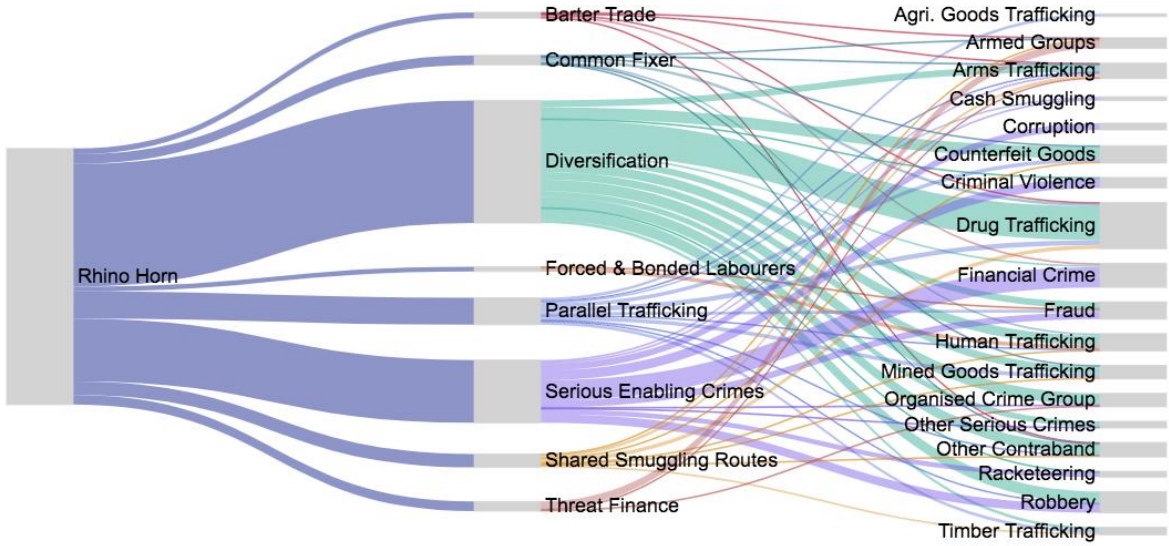
We identified the following distinct types of crime convergences that link illegal wildlife trade with other serious and organised crime activities: barter trade (n=46), bonded labourers (n=18), common fixers (n=43), diversification (n=576), geographic convergence (n=61), high-profile criminal consumer (n=7), parallel trafficking (n=309), enabling crimes (n=328), shared smuggling routes (n=96), taxation (n=7), and threat finance (n=100).

The most common reporting about illegal wildlife trade crime convergences did not specify the species name and used broad statements about illegal wildlife trade in general ("not specified/ wildlife in general"). When these data were excluded, I found that the most common convergence that was reported in the literature is the diversification of criminal networks trafficking in rhino horn and drugs (Table 2). Following this, ivory trafficking was frequently reported to converge with threat finance of non-state armed groups, including rebel militias, insurgents, warlords, and terrorists (Table 2).

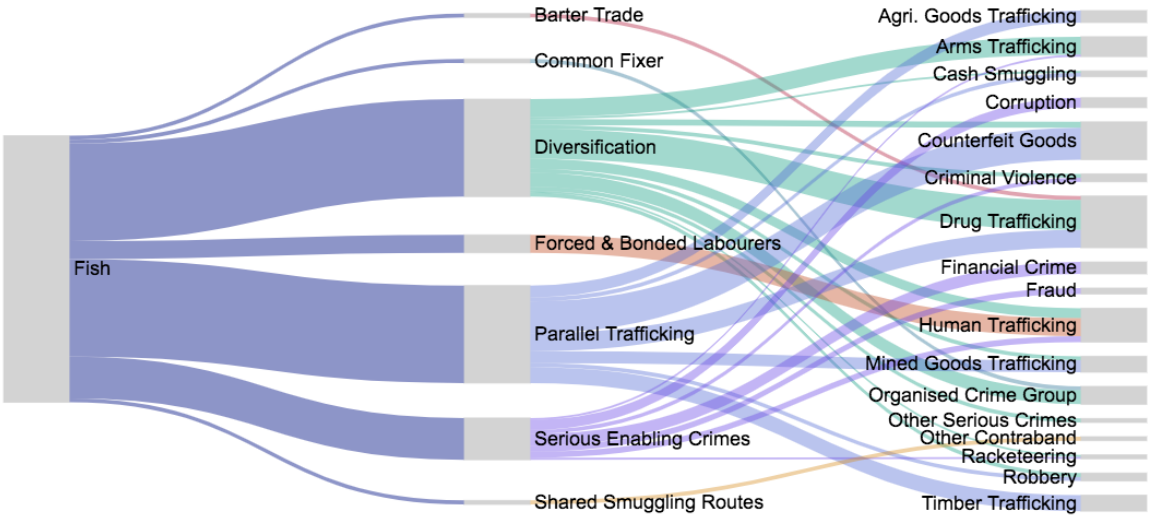
a


Ivory
Barter Trade
Common Fixer
Diversification
Forced & Bonded Labourers
Geographic Convergence
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Taxation
Threat Finance
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Cash Smuggling
Corruption
Counterfeit Goods
Criminal Violence
Drug Trafficking
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Racketeering
Robbery
Timber Trafficking

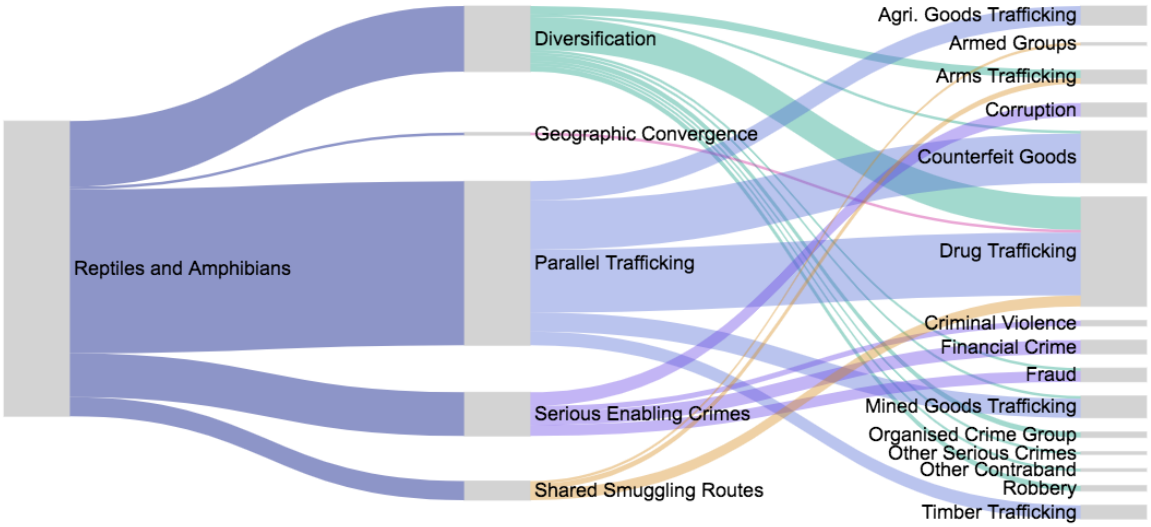
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Rhino Horn
Barter Trade
Common Fixer
Diversification
Forced & Bonded Labourers
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Threat Finance
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Cash Smuggling
Corruption
Counterfeit Goods
Criminal Violence
Drug Trafficking
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Racketeering
Robbery
Timber Trafficking

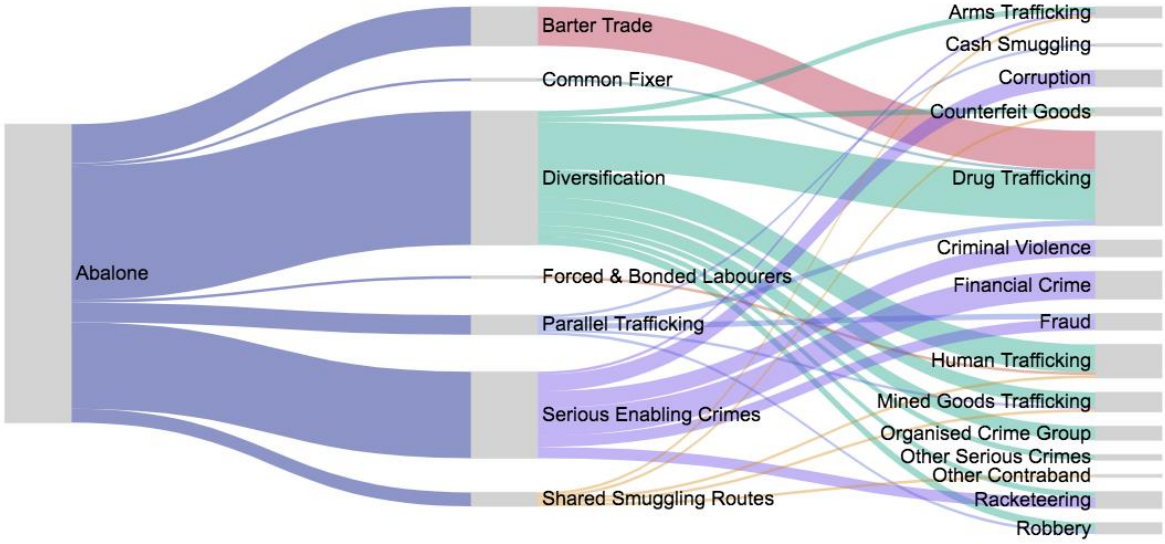
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Fish
Barter Trade
Common Fixer
Diversification
Forced & Bonded Labourers
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Agri. Goods Trafficking
Arms Trafficking
Cash Smuggling
Corruption
Counterfeit Goods
Criminal Violence
Drug Trafficking
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Racketeering
Robbery
Timber Trafficking

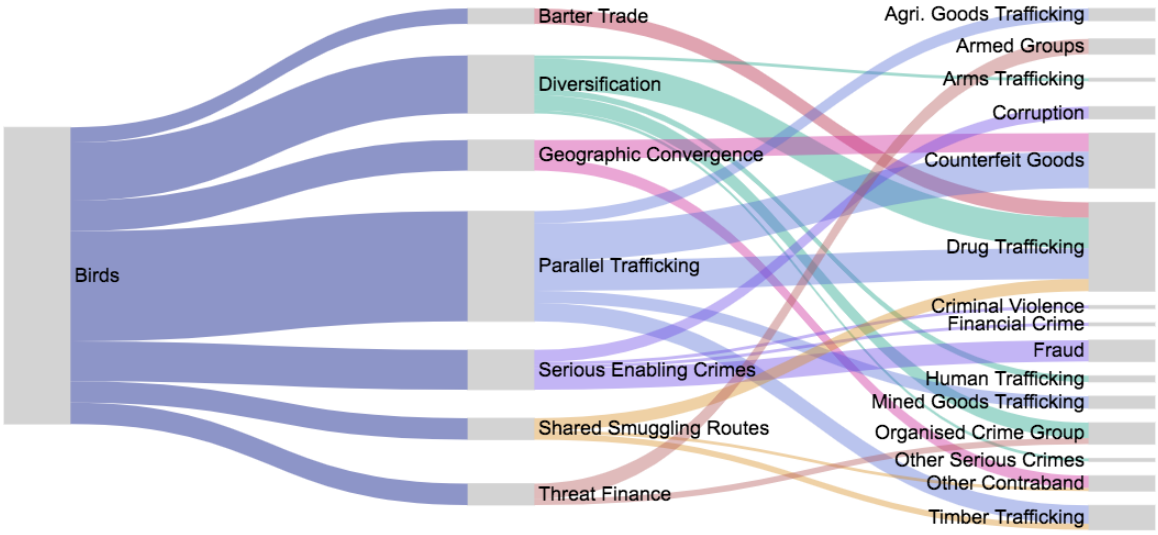
d


Reptiles and Amphibians
Diversification
Geographic Convergence
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Corruption
Counterfeit Goods
Drug Trafficking
Criminal Violence
Financial Crime
Fraud
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Robbery
Timber Trafficking

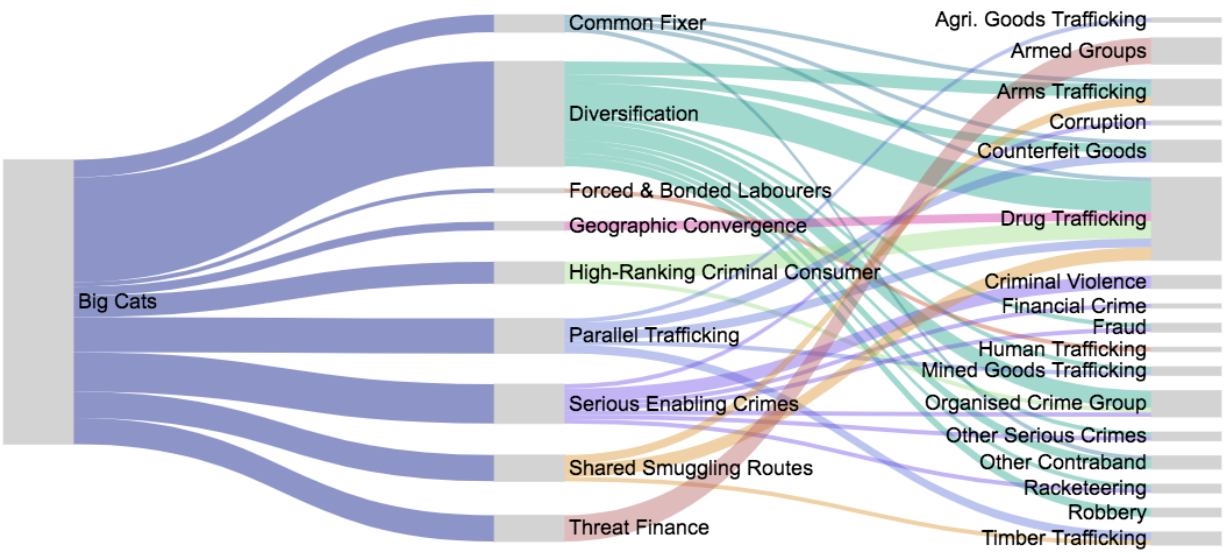
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Abalone
Barter Trade
Common Fixer
Diversification
Forced & Bonded Labourers
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Arms Trafficking
Cash Smuggling
Corruption
Counterfeit Goods
Drug Trafficking
Criminal Violence
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Racketeering
Robbery

f


Birds
Barter Trade
Diversification
Geographic Convergence
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Threat Finance
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Corruption
Counterfeit Goods
Drug Trafficking
Criminal Violence
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Timber Trafficking

g


Big Cats
Common Fixer
Diversification
Forced & Bonded Labourers
Geographic Convergence
High-Ranking Criminal Consumer
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Threat Finance
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Corruption
Counterfeit Goods
Drug Trafficking
Criminal Violence
Financial Crime
Fraud
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Other Serious Crimes
Other Contraband
Racketeering
Robbery
Timber Trafficking

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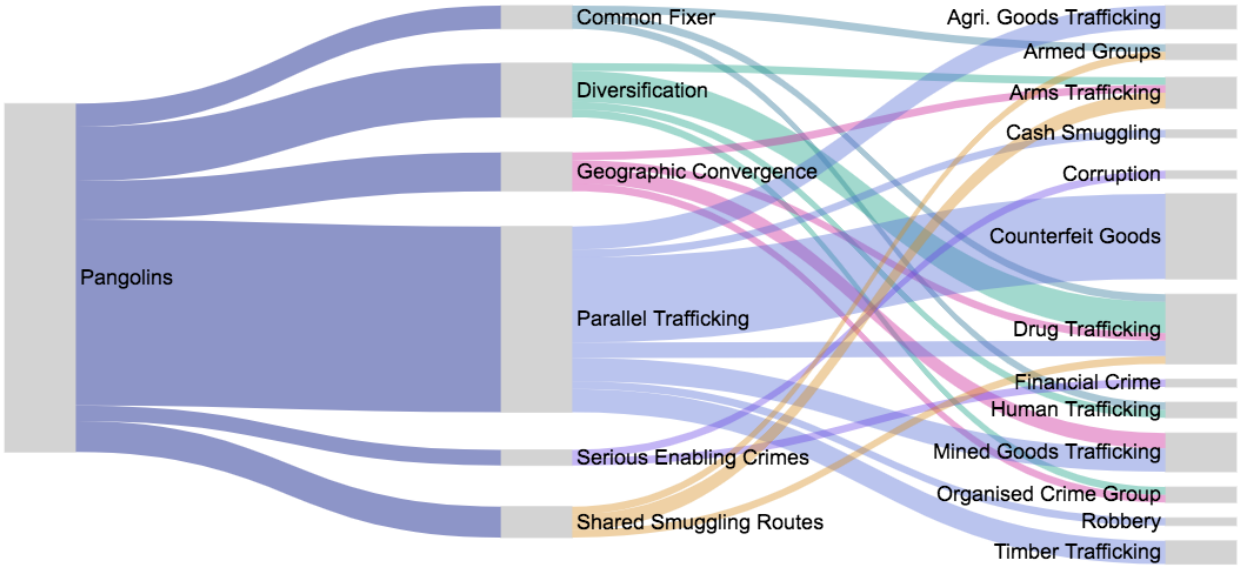

Pangolins
Common Fixer
Diversification
Geographic Convergence
Parallel Trafficking
Serious Enabling Crimes
Shared Smuggling Routes
Agri. Goods Trafficking
Armed Groups
Arms Trafficking
Cash Smuggling
Corruption
Counterfeit Goods
Drug Trafficking
Financial Crime
Human Trafficking
Mined Goods Trafficking
Organised Crime Group
Robbery
Timber Trafficking

Figure 3.3 (a-h). Visualisation of reported crime convergences in the illegal trade of: ivory (a), rhino horn (b), fish (c), reptiles and amphibians (d), abalone (e), birds (f), big cats (g), and pangolins (h). The nodes on the left represent the taxa or product, the middle nodes represent the type of crime convergence, and the end nodes represent the other crime types. The width of the arcs are proportional to the number of times the convergence was reported in the literature.

More visualizations of the data are available in the Appendices (Figure S1-S4).

3.4.4 Convergence Settings

We found that illegal wildlife trade crime convergences have been reported around the world, yet with 'hotspot' locations appearing (Figure 3.4). Crime convergences relating to illegal wildlife trade in South Africa were recorded the highest number of times in the literature (n=63), mostly focused on convergences of abalone and rhino horn trafficking supply chains with other organised crime. Following South Africa, other hotspot locations included Mexico (n=28), Democratic Republic of the Congo (n=23), Colombia (n=18), Vietnam (n=18), Thailand (n=16), Hong Kong (n=14), Kenya (n=14), Brazil (n=13), Somalia (n=13), United States (n=13), and Russia (n=11), although the reported types of convergences differed greatly across each location.

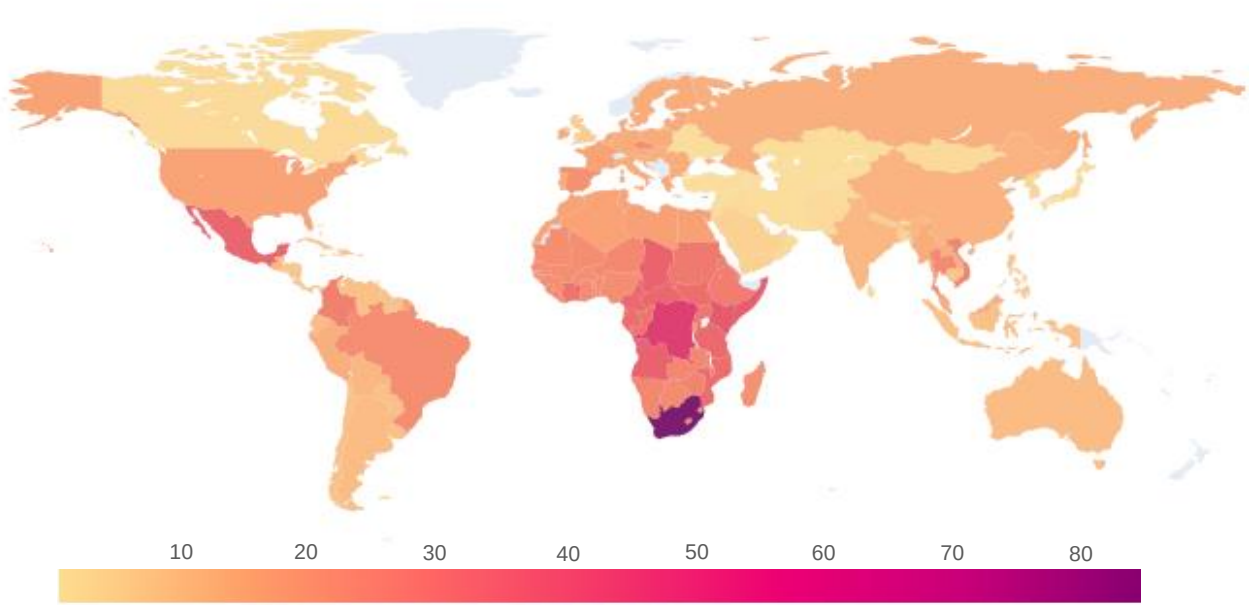


Figure 3.4. Choropleth map indicating the frequency of reported convergences between illegal wildlife trade and other serious and transnational organised crime according to the literature. Note: This map includes data on convergences at the regional-level, in addition to country-level data. For instance, while South Africa was specified 63 times, this map also displays the data from regional observations such as "Sub-Saharan Africa," and "Southern Africa," which brings the total count for South Africa to a total of 87.

3.4.5 Specific Organised Crime Groups

Since it can be difficult to differentiate the criminal activities of non-state armed groups and organised crime groups (Anagnostou 2021), I included both in the analysis. I included groups

that either are known for their non-wildlife-related crimes (such as trafficking in humans, counterfeit goods, and/or drugs), and groups that traffic wildlife while employing serious organised crime tactics (such as violence, money laundering, and corruption). In total, I identified 59 named criminal organisations that have been involved in illegal wildlife trade along with other serious and organised criminal activities (see Table S3; Table 3). Additional crime groups and networks involved in crime convergences were often not given a distinguishing name/label in the literature, and therefore were not included here as a recognised organised crime group. For the organised crime groups, I extracted information at the same level of specificity used in the original articles. For instance, in some cases it was reported that "Triads" in general were involved in illegal wildlife trade, whereas others specified "14K" which was entered separately.

3.5 Discussion

The illegal trade of nearly all taxa recognised as highly trafficked in the 2020 World Wildlife Crime Report (UNODC 2020), emerged as converging with other serious and organised crime. One of the possible arguments to suggest that convergences may be rare in illegal wildlife trade, is that it requires some degree of specialization to traffic live animals across borders (e.g. animal feed, tranquilizers, and sound proofing). The illegal trade of live wild animals is thought to be highly sophisticated and systematic to supply wealthy individuals with exotic pets, illicit zoos, and the tourist entertainment industry, including circuses (Nellemann 2014). However, my results show that according to the literature, the trafficking of various taxa of live animals have converged with other types of transnational organised

crime. This includes the live animal trade of great apes, monkeys, birds, big cats, and reptiles. Animal welfare may in many cases be of little concern to illegal traders, as many trafficked animals suffer from stress, rough handling, crushing, wounds, infections, illness, asphyxiation, starvation, dehydration, temperature shocks, trauma-induced anorexia, self-mutilation, and disease (Cantú Guzmán 2007; Clark et al. 2008; Rosen and Smith 2010; Fuller et al. 2018). It is not uncommon for animals to die in transit (Rosen and Smith 2010; Baker et al. 2013).

The disregard for animal welfare seemingly contradicts theories of profit maximisation in transnational organised crime. Simply put, animals that die in transit for the live animal trade cannot be sold as pets and profited from. Therefore, it would seem in the best interests of the traffickers to keep the animals healthy. It is, however, possible that wildlife traffickers simply lack an understanding of animals' needs (e.g. that amphibians require moisture, or that some species are highly sensitive to captivity stress), especially if the perpetrators are crime groups that have diversified from another primary crime. In addition, the poor conditions that animals are kept in may be an accepted risk taken for the purposes of minimising the transaction costs of smuggling, and therefore may still reflect profit maximisation strategies. For example, crowding many animals together in a singular small shipment can minimize transportation costs, while withholding food and water, and neglecting hygiene may minimise disruptions to transportation times. In other words, the potential losses of life as a result of poor animal welfare may be considered worth the risk to traffickers, if the smuggling conditions minimize the chances of detection, the costs of trafficking, and if the

remaining survivors are still profitable. This is likely the case where wildlife is used as the camouflage for other contraband, such as drugs, during parallel trafficking operations. The clandestine treatment of wildlife by wildlife traffickers makes it difficult to truly understand the transport conditions, the amount of injuries, deaths, and other welfare challenges in the illegal live animal trade (Fuller et al. 2018).

Our results were initially based upon – and then expanded on – the theory and typologies proposed by van Uhm and Nijman (2020), Spevack (2021), and Anagnostou (2021). The crime convergences identified in this study can be broadly separated into two distinct categories. Firstly, crime convergences can be "active," where offenders are actively seeking to engage in multiple illegal activities through diversification in general, or more specifically through contraband barter trade, parallel trafficking (or poly-commodity smuggling/ shipment convergence), taxation of wildlife traffickers by other organised crime groups, and threat finance (funding non-state armed groups including militias, insurgents, and terrorists). Active convergences also include occurrences of wildlife traffickers employing enabling crimes such as criminal violence, corruption, and illicit financial flows. Alternatively, crime convergences can be characterised as "passive," which includes convergences that occur incidentally and based on environmental factors (when offenders play a passive role in the overlap between wildlife trafficking and other illegal activities), such as shared/similar modi operandi, overlapping trafficking routes, and geographic convergences. Geographic convergences capture the concepts of hub convergence, such as a common city or port for

contraband trafficking, and jurisdiction convergence more broadly, such as regions with poor governance of illegal activities in general (Spevack 2021; Anagnostou 2021).

The distinction between active and passive convergences is an important one, as active and passive convergences will require different law enforcement interventions. For instance, active convergences involve the same illicit networks and individuals, and therefore may be addressed using approaches such as organised crime group mapping, social network analysis, and tracking the transfer of illicit proceeds. On the other hand, passive convergences such as geographic hubs might be addressed using community engagement and civil society partnerships, hotspot policing, and anti-corruption interventions. Addressing all types of crime convergences will require multi-agency and multi-sectoral action, and greater collaboration within and across jurisdictions.

Common fixers were rarely reported, likely because this requires a highly nuanced understanding of the intermediaries in multiple trafficking networks (information which is difficult to obtain). However, a variety of enabling crimes of illegal wildlife trade were commonly reported in the literature regardless of the taxa being trafficked, including money laundering, tax evasion, and other illicit financial flows; arms, weapons, ammunition and parts trafficking; criminal violence; fraud; theft and organised robbery; racketeering; counterfeit, forged, and fraudulent documentation; and bulk cash smuggling and counterfeit currencies. This finding is noteworthy, as many conservationists have tried to increase the profile of illegal wildlife trade as a serious crime by claiming that it is linked to high-profile

transnational organised crime groups and terrorist networks (Anagnostou 2021). However, it is evident that many types of international illegal wildlife trade should be considered serious crimes on their own, given the variety of serious enabling offenses that facilitate the trafficking of a multitude of taxa and products. The recognition of this has led to the proposal for an illegal wildlife trade protocol to be considered under UNTOC. The adoption of an illegal wildlife trade protocol would mandate member states of the UNTOC to cooperate, share information and resources, and to adopt comprehensive domestic legislation to stop the illegal wildlife trade (End Wildlife Crime 2020).

Trillions of dollars are laundered through the global financial system every year, and organised crime networks can exploit both legitimate and illegitimate banking systems to clean dirty money (TRAFFIC 2021). Front companies, shell companies, domestic bank transfers, international bank transfers, trade-based Hawala-based and cash-based payments have all been used to facilitate the illegal wildlife trade. This includes the illegal trade in ivory, rhino horn, abalone, great apes, birds, caviar, fish, pangolins, reptiles and amphibians, big cats, marine invertebrates, and terrestrial invertebrates. While money laundering is often an enabling crime for the illegal wildlife trade, in some cases the reverse is also true (van Uhm 2020). One example of this is members of an international organised crime network exporting shipments of sea cucumber from Mexico for distribution in the United States. Investigators found that the pallets were in fact filled with heroin, cocaine and fentanyl, and the traffickers were laundering their proceeds from drug trafficking using multiple food and seafood companies as fronts (Gallagher 2017; Dudley 2019). The possible extent of money

laundering used in the illegal wildlife trade and by converging criminal networks highlights the importance of improving implementation and enforcement of anti-money laundering legislations (see FATF 2020).

The arrest and prosecution of poachers does little to slow poaching rates as another poacher may simply step up to fill the gap (Felbab-Brown 2017), so additional control and illegal wildlife trade enforcement approaches are needed beyond the poaching level. Dismantling an illegal wildlife trade network may instead require targeting the middle operational layer of the network (Wittig 2016), or confronting the tendency of successful criminal networks to segment their operations into isolated, redundant cells (Kenney 2007). When a specialised function, such as international transportation or money-laundering, is operated by a single non-redundant node or actor, law enforcers can exploit this structural vulnerability (Kenney 2007). These specialised functions connect upper and lower-level operating networks and may be the most productive place to insert informers and undercover officers (Wittig 2016). Arrests should be coordinated across jurisdictions and levels, and carried out all at once where possible so that the rest of the network is unable to adapt and replace each member of the group as they are removed (Felbab-Brown 2017). Middle-layer targeting requires longer and more sophisticated investigations to identify and build evidence against the network members that connect upstream and downstream components, or the fixers who have specialised roles that are essential for the operational capacity (Wittig 2016).

There is a general consensus among researchers that illegal wildlife trade is driven by its high profit margins, consumer demand in destination countries, weak governance and state capacity to enforce wildlife laws, inadequate penalties in many cases, and rampant corruption at all levels of the value chain (OECD 2018; van Uhm 2018). Corruption is the constant factor along each node of the supply chain (OECD 2018). Park rangers, conservation officials, police and military officers, customs officers, diplomats, entry–exit inspection, quarantine bureaus, investigators, prosecutors, and elected officials can all be complicit in illegal wildlife trade (van Uhm and Moreto 2017; OECD 2018). While it may not seem threatening on its own, bribing one government official to grant a permission for an illicit business deal is the first step in 'insidious corruption' (Neumann 2013). This can then spread quickly throughout other officials and branches of government, either out of greed, or to minimize exposure to danger (Neumann 2013). The resulting systemic corruption facilitates a low-risk environment for criminal activity (Mandel 2011; Douglas and Allie 2014). This can similarly prevent local people from engaging in anti-illegal wildlife trade efforts (Anagnostou et al. 2020). Therefore, while there are a number of interconnected factors that are also at play, such as geographic location, trade laws, and national wildlife legislation, it is not surprising that many of the illegal wildlife trade convergence hotspot locations score low on the public sector corruption index (Transparency International 2021). It is also important to consider the variety of factors related to multidimensional poverty (social, economic, health, political, and protective) that can lead people to engage in illegal wildlife trade (Anagnostou et al. 2021). Addressing organised crime in convergence settings requires strategic approaches that are founded on a nuanced understanding of the socio-economic context

(Reitano et al. 2018). In some cases, this can include a number of proactive measures such as countering corruption, criminal justice reform, strengthening partnerships and engaging with civil society actors, capacity-building of local organisations, awareness campaigns, and job creation (Kemp 2020).

Hotspot locations for convergences according to the literature may also signify researchers' biases, rather than representing an accurate indicator of crime activities. For instance, as much research attention on illegal wildlife trade has focused on ivory and rhino horn, convergences may be frequently reported in elephant and rhino range states. Smaller and perhaps less-charismatic species, such as turtles and tortoises from (for example, from South America or the Indian subcontinent), were among the most frequently reported in poly-commodity/ parallel trafficking convergences, and yet are still likely underrepresented in the literature. More research is needed to shed light on the crime convergences that occur in the illegal trade in non-charismatic species, especially marine and terrestrial invertebrates. Future studies could also investigate crime convergences in the illegal plant trade, as well as convergences between various forms of illegal wildlife trade, including convergences between the illegal trade in plants and animals.

The gateway theory of trafficking suggests that many career criminals obtain the necessary skills, knowledge, experience, and social networking through participation in parallel illicit pursuits (Kenney 2007). Organised crime groups have the network and infrastructure in place that allows them to diversify their interests, and may be simultaneously involved in multiple

legal and illegal enterprises (Hübschle 2011), especially shifting interests to wildlife, due to low risk and consequences if caught (van Uhm et al. 2021). Out of all of the serious and organised crimes identified in this review, drug trafficking emerged the most commonly reported convergence with illegal wildlife trade. In the Australian illegal drug trade, Hughes et al. (2019) found that poly-drug trafficking, network size, and network nationality were all associated with the likelihood of concurrent charges for other serious and organised crimes (Hughes et al. 2020). Many of the concurrent charges for drug traffickers referred specifically to enabling crimes for the purposes of directly or indirectly facilitating drug trafficking (i.e., dealing in proceeds of crime, firearms offences, corruption and fraud), as opposed to other primary crimes (such as firearms trafficking or human trafficking) (Hughes et al. 2020). As illegal wildlife trade can be used as an enabling crime for drug traffickers (e.g. when wildlife is used as a cover to conceal illicit drug shipments through parallel trafficking), this may make it a common convergence for diversified drug trafficking networks. In other cases, drug trafficking might be considered an enabling crime for illegal wildlife trade, for instance, when diversified traffickers exploit and coerce drug users to supply illegally harvested wildlife in return for addictive narcotics. Therefore, more research is needed to test this pattern of crime convergence in illegal wildlife trade.

Regarding the role of organised crime groups in illegal wildlife trade, there is a potential bias that researchers may place more emphasis on well-known transnational crime groups (Anagnostou 2021). I warn that as little research has been done, their involvement in illegal wildlife trade may be over-stated, and that more empirical work is needed. I found that many

highly sophisticated and diversified syndicates are involved in illegal wildlife trade and other serious and organised crime, as indicated by the size of their network and shipments, and the level of corruption involved, yet were simply not named in the literature.

Importantly, the focus placed on each convergence in the literature is also likely not a reflection of the frequency of these convergences in reality. Many of the reported convergences are repeatedly stated as facts by expert authors throughout the inclusion years of this study, yet often without providing new empirical information. In addition, this study only included English language publications which may have had a limiting effect on the crime convergence data that I was able to collect. This meant that certain organisations and publishers which could have relevant publications, were considered ineligible for inclusion in the present study. Future reviews of non-English local media reporting on convergences may allow for the development of a more nuanced understanding of context-specific convergences. Furthermore, the majority of the publications focusing on how illegal wildlife trade relates to other types of organised crime were not peer-reviewed studies. This is a serious issue, as the narrative that illegal wildlife trade converges with other types of organised crime and the funding of non-state armed groups is often exaggerated and generalised (Anagnostou 2021). This narrative can also be used to inform potentially inappropriate policy responses, especially at the illegal hunting-level, that are not founded on scientific data nor a nuanced understanding of how the crime convergences are occurring (Anagnostou 2021). The implications of the possible growing convergence of the illegal wildlife trade with other serious and organised crimes are that new approaches are needed.

Efforts to protect wildlife from illegal trade could focus more on disrupting fixers, facilitators, and other intermediaries that operate in the middle of transnational wildlife trafficking networks, in combination with implementing anti-corruption and poverty alleviation mechanisms, and community-based conservation in convergence settings, which can prevent wildlife crime proactively at the local level.

3.6 Conclusions

While there are various opposing perspectives regarding the convergence of illegal wildlife trade with other forms of transnational organised crime (Anagnostou 2021), my research highlights that according to the literature, the international illegal wildlife trade may relate to numerous other serious and transnational organised crimes in a variety of ways. This review of publications over the past two decades also indicates that both the type of convergence and the type of converging crime can vary greatly depending on the wildlife being traded. The secondary findings from the present exploratory study can be used to inform future empirical research, including participatory research with experts and practitioners. What remains unknown (and cannot be derived from the current literature) is how often the convergences reported here occur in reality, as well as the challenges and opportunities for practitioners who are tasked with addressing converging crimes. Future studies should collect information directly from wildlife law enforcement officers, and officers focusing on other organised crime types based on their knowledge and experiences pertaining to crime convergence. This will support the development of a more robust understanding of crime convergence, trends in illegal wildlife trade criminal networking, and how convergences differ along the supply

chain. Understanding crime convergence may in turn support the improvement of wildlife laws, and the implementation of more effective and equitable wildlife law enforcement worldwide.

Chapter 4

Beyond anecdotal evidence: Disentangling and demystifying converging crimes and illegal wildlife trade in South Africa, Hong Kong, and Canada.

4.1 Overview

Illegal wildlife trade is increasingly reported as having links to other serious and organised crime activities such as money laundering, corruption, violence towards people, and trafficking in drugs, humans, and arms, a phenomenon often labelled “crime convergence”. However, limited empirical research has been conducted to understand the extent and nature of these linkages. The present study seeks to answer the following questions: what other criminal activities does illegal wildlife trade converge with and what is the nature of these convergences; and what are the factors shaping crime convergence? One hundred and twelve law enforcement personnel and other experts were interviewed in South Africa, Hong Kong, and Canada to understand the extent of crime convergence based on their knowledge, experience, criminal intelligence, and real cases. My results showed that, based on law enforcement evidence, illegal wildlife trade does converge with a multitude of illegal activities, including illegal drug trade, such as cocaine, cannabis, and heroin; sex trafficking; child prostitution; trade in human body parts; migrant smuggling; forced and bonded labour; illegal alcohol trade; illegal firearms trade; vehicle theft and trafficking; counterfeit and pirated goods trade; and illegal trade in mined resources among others. Interviewees who have led large investigations confirmed that convergence is the norm, but that it depends on the species, location, organised crime group/network, and stage of the supply chain. Crime

convergence can range from opportunistic and ad hoc, to sophisticated and sustained by an established network. For the latter, adopting an organised crime approach to countering illegal wildlife trade is essential to dismantle criminal networks that are involved in a variety of offenses and illegal trades.

4.2 Introduction

Organised crime is a dynamic and ever-evolving global threat, posing significant challenges to societies worldwide (Dugati et al., 2020). A global assessment has identified a widening gap between criminality and state abilities to control and diminish organised crime (Global Initiative, 2023). Organised crime networks threaten public safety, contribute to economic instability, erode community resilience, weaken the rule of law, and facilitate illegal natural resource exploitation and the spread of corruption. Specifically, transnational trafficking activities can impede state foundations of responsive democratic rule; inhibit criminal activity detection and prosecution, leading criminal behaviour to become the norm; cause the deterioration of social and financial structures; and expose international system vulnerabilities by illuminating components that can be exploited (Mandel, 2011).

Governments typically address the variety of organised crime activities by designating separate departments, agencies, and units; there may be distinct and specialised subunits within law enforcement for gang activity, cybercrime, narcotics trafficking, human trafficking, and wildlife trafficking, to name a few. In addition, relevant information on criminal activities may be held by separate health, border, tax revenue, and commercial

agencies (Phythian et al., 2024). Furthermore, law enforcement organisations typically separate staff by geographically defined jurisdictions, such as by province/state, county, or municipality. The net result is that pertinent information on crime is generally scattered across many silos (Phythian et al., 2024). As such, it can be difficult to identify when complex organised crime groups operate across jurisdictions and across multiple crime types. With the rise of sophisticated transnational crime, it is increasingly important to transcend silos and piece together fragmented information.

Illegal wildlife trade (IWT) is a type of organised crime that encompasses the harvest, transportation, distribution, and sale of wildlife and wildlife products in violation of laws and regulatory measures. Illegal wildlife trade is often publicly reported as converging with the same networks that are also trafficking in drugs, humans, and arms, and committing acts of terror (Anagnostou and Doberstein, 2022). The motivations for claims of convergence have been questioned previously, given how little evidence is available (Anagnostou, 2021). Massé et al., (2020) suggest that these links have been exaggerated so that organisations working in the environmental space can tap into new sources of funding, and gain access to resources that are designated for human security concerns and crimes that are typically considered more ‘serious’. Similarly, people working in the wildlife crime space are able to attract a higher level of political attention and law enforcement interest by drawing attention to organised crime links (Massé et al., 2020).

In some regions, there is robust evidence to suggest an overlap. For example, there is a well-documented, strong, and increasing presence of Mexican cartels in wildlife and fisheries industries in coastal areas of Mexico, particularly the Sinaloa Cartel and the Jalisco Cartel (Felbab-Brown, 2022). However, in most other regions, there is limited or non-existent empirical and publicly available data on the other crime types converging with illegal wildlife trade, the species involved, relationship details, and how often convergences occur in reality. This study aimed to disentangle these links and add empirical data on real cases, intelligence, and investigations, based on information gathered through semi-structured interviews with law enforcement and other experts (i.e., thesis Research Questions 1, 2, and 3). Two types of crime convergences were identified in my previous study: active and passive (Anagnostou and Doberstein, 2022). Active convergences are characterised by offenders who are actively seeking to engage in multiple illegal activities, as opposed to convergences that occur incidentally and are based on environmental factors (i.e., passive, such as geographic convergence). The current study focused on active convergences.

Given the sensitive nature of this research, a number of results and information from interviews were not included in this paper. No information about open files or ongoing cases were included. Prices of illegal wildlife commodities were intentionally left out of the results, as this information can often be counterproductive in efforts to protect wildlife from illegal exploitation. In addition, if one interviewee provided information on the condition that it would be off the record, but one or more other interviewees said the same thing on the record, the researcher in most cases decided to leave that information off the record. Lastly,

in light of how much information on this topic is rapidly spread that is based on hearsay or anecdotal evidence, information on convergences that the interviewee did not have direct knowledge on are not included in the results (e.g., “I always suspected it but was never able to prove it”; or, “I have heard about that link but never actually seen it”). The results presented are based on data from law enforcement and other experts (n=112) who have led investigations, organised sting operations, looked through wildlife traffickers' phones and communications, interviewed arrested offenders, collected and analysed intelligence, analyzed financial transactions, and/or put cases together on organised illegal wildlife trade.

4.3 Methods

4.3.1 Interviews

Literature on IWT and crime convergence was reviewed in order to create an informed, initial set of semi-structured interview questions (Anagnostou, 2021; Anagnostou and Doberstein, 2022; see Appendix Doc. S2) which allowed interviewees the opportunity to discuss and elaborate beyond the pre-set questions where needed. The aim of the interviews was to gather information on how wildlife trade converges with other types of serious and transnational organised crime from practitioners in various sectors who have directly or indirectly dealt with this phenomenon. As illegal wildlife trade is a global issue, the study focused on locations in multiple continents, including South Africa, Hong Kong, and Canada in order to compare findings on three different interconnected continents and at various stages of international supply chains. Selected experts from various other countries were also recruited for interviews (n=12) to provide additional insights on how the regional cases fit

into the broader global context (e.g., United States, China, Nigeria, Mexico, Indonesia, the United Kingdom, Mozambique, and other regional and international experts). Interviews were conducted in person where possible, although fieldwork was initially limited due to COVID-19 restrictions on travel and in-person research for the early stages of the project. Fieldwork took place for 10 weeks in March, April, and May 2023 in South Africa, for 7 weeks in June 2023, July 2023, and April 2024 in Hong Kong, and intermittently between November 2022 and April 2024 in Canada. Sixty-four interviews were conducted in person and 49 interviews were conducted virtually.

4.3.2 Sampling Design

Three non-probability sampling designs were used to identify study interviewees: purposive, expert, and snowball sampling. Purposive sampling is an approach where the researcher uses their judgement on who will provide the best information to achieve the objectives of the study (Etikan and Bala, 2017; Sharma, 2017). For example, the lead researcher sought out interviewees who work for wildlife crime governmental and non-governmental organisations in the study locations, as they would have first-hand information to share about crime convergence. The advantages of purposive sampling include that interviewees can provide the researcher with information that is more likely to be generalizable, compared to other types of sampling, and that it is a useful technique at early stages of qualitative research to build foundational knowledge before adopting another sampling approach, such as expert or snowballing (Sharma, 2017).

Expert sampling similarly involves the researcher seeking out known experts in the discipline who have specialised experience in the topic of interest and can explore specific issues in more detail (Etikan and Bala, 2017). Based on literature, networking, and presentations attended, the researcher also contacted experts who were already working on the topic of crime convergence. Lastly, I used a snowball sampling technique (i.e., using interviewees' networks to identify more interviewees) to invite additional relevant agencies and individuals who possessed first-hand experience with combatting IWT (Newing 2010). To counteract the disadvantage of snowball sampling (i.e., interviewees only connecting the researcher to people who have the same biases as themselves (Etikan and Bala, 2017; Sharma, 2017)), I included interviewees from my own networks.

Interviewees included: law enforcement, including employees from national and provincial wildlife law enforcement agencies, national and local police, and customs intelligence (n=52); non-governmental organisation (NGO) experts (n=28); NGO investigators who directly advance wildlife trafficking investigations (n=8); anti-money laundering specialists, including from financial institutions and financial intelligence units (n=8); members of IWT and law enforcement research institutions, including academia and think tanks (n=7); legal professionals, including prosecutors (n=5); staff of private anti-poaching units (n=3); and intergovernmental organisations (n=1).

4.3.3 Data Analysis

Interviews were transcribed verbatim and thematically analyzed and coded manually in order to assign codes to responses and identify the patterns emerging from the interviews (Newing, 2010). As the aims of this study were exploratory, themes were generated based on a preliminary assessment of the content of the interview transcripts, with no predefined concepts of what to look for (Charmaz, 2006). I analysed interviews through open coding to identify emergent ideas in the data (Saldaña, 2015; Strauss & Corbin, 1998), and detailed coding of the data at early stages of the project allowed the researchers to consider explanations beyond my own personal biases and preconceptions (Oliver, 2012). Emergent ideas were labeled, and the full transcripts were examined to gather perspectives on the same topics for descriptive analysis, which were grouped together in Excel columns. I used focused coding to label similarly coded data (Saldaña, 2015; Strauss & Corbin, 1998), followed by axial coding (Saldaña, 2015; Strauss & Corbin, 1998) to identify higher-level relationships between the themes that emerged and to group codes into categories. Selective coding then allowed me to integrate the categories of organised data from axial coding into a new unifying theory (Williams and Moser, 2019). Results are often presented using anonymous quotations to show that thematic analysis was rooted in empirical participant data (Castleberry and Nolen, 2018). Quotes were not linked to assigned interviewee codes, as the researcher wanted to minimize the chances of interviewees being identifiable through linking their unique knowledge on multiple topics.

4.4 Results and Discussion

The research revealed clearly that wildlife trafficking networks in South Africa, Hong Kong, and Canada have become intertwined with many other types of criminality. IWT actors can range from small-scale opportunists to well-established and highly organised transnational crime syndicates. Both types of IWT networks have converged with a myriad of other serious and organised crime activities, and in a variety of ways.

4.4.1 Drug Trafficking

The type of organised crime most frequently reported by interviewees to converge with IWT was drug trafficking (n=61). In both Canada and South Africa, organised crime networks first became successful in drug trafficking before diversifying or transitioning into wildlife trafficking. As explained by one expert,

> "in the case of the rhino horn trade in South Africa, Mozambique, in the early days at the beginning, [we] saw a direct overlap with the drug trade. It was the networks who understood how to move drugs and were involved in corruption and had an apparatus. Individuals would get involved in rhino poaching, and then it escalated into its own thing. So, you no longer necessarily have the same players because then it escalated into a big commodity trade all on its own. But the origins and some of the players originated in the drug trade."

The drug-to-wildlife-trafficking transition has been observed in Canada as well. For instance, one interviewee commented on a cross-provincial organised crime syndicate that was involved in trafficking in bear gall bladders. The convergence there apparently occurs at the

marketing level, where individuals were collecting bear gall bladders from poachers and marketing them in the same way that they were simultaneously collecting and selling other illicit commodities, such as drugs. In other cases, the transition has been made in the opposite direction, with successful wildlife traffickers expanding into drug trafficking. A Canadian interviewee provided an example of this relating to an international wildlife trafficking operation: "this guy was into wildlife trafficking for about a decade and then decided to get into narcotics. Why not?"

In South Africa, the links between IWT and drugs are extensive, especially related to abalone and rhino. Experts observed that the same networks in South Africa are involved in both wildlife trafficking and drug trafficking, including cocaine, heroin, mandrax, and cannabis. International syndicates are trafficking drugs, alcohol, and wildlife, with cocaine, which is imported into South Africa and then exchanged for wildlife products, reportedly being the most traded in the Western Cape. Law enforcement officials confirmed that abalone "is definitely still being used as a means of barter" for methamphetamine and cocaine. Another expert noted that,

> "[abalone] divers will not be involved in selling narcotics. The couriers might use. But the person they are supplying to: they, most of the time will not only be dealing abalone, but other commodities. For example, selling drugs in drug outlets… We had a couple of recent incidents. For the first time we saw it where the Asian buyers themselves were also actively starting to sell drugs and methamphetamine. The reason why is that with COVID and everything, people were not allowed to dive. And there was a dip in the market. To stay in their lifestyle, they were selling

> narcotics. The divers also insisted on more payment per kilogram, and they said 'impossible, we cannot pay that because then we must ask the market on the other side for more money to go and sell it.' And there was a huge argument."

Another interviewee elaborated that, among the rhino-trafficking syndicates in Johannesburg, cocaine, heroin, and illegal alcohol trades are high, as well as the manufacture of synthetic drugs. Pangolin-trafficking networks currently appear to be less organised in South Africa, and the links to drug trafficking are more opportunistic and *ad hoc*, although one expert also noted seeing "quite a bit of drugs, opioids, methamphetamine" from pangolin traffickers that they are in contact with.

This pattern was also reported in Hong Kong, where one interviewee noted that, "there's a connection in Hong Kong. It'll be cannabis, and heroin and cocaine. It'll tend to be linked to pangolins from West Africa… The same international organised crime group that's moving all of that. Because you're talking about a product like pangolins. That's a processed product that can be mingled with these cannabinoids and in other products." One case reported by an interviewee in Hong Kong resulted in the individual being charged with trafficking dangerous drugs and illegal trade of CITES appendix I and II-listed wildlife species. The individual was found to have over 40 pots of various CITES appendix I listed plant species, and 13 plastic bags with dangerous drugs, including LSD, MDMA, and cannabis.

One type of convergence that was noted in multiple provinces in Canada is bartering illegal drugs for illegal wildlife products. Heroin and cocaine are used as payment, particularly in

many remote communities. In one investigation, an interviewee stated that, "we were doing surveillance, and they killed a sturgeon. Instead of loading it into the trunk, another vehicle came down and it was the local [redacted] drug dealers, and they were trading the sturgeon directly across for heroin." Another investigator similarly explained that fish and other wildlife is "used like cash, for whatever that might be, it might be gas, or booze or drug prescriptions." An officer in the Yukon said,

> "we've seen that too. I've seen a polar bear hide that came down to a drug dealers house. And when the [police] raided his house here, they found a grizzly bear hide and a polar bear hide, and this guy's never hunted. He's just getting this stuff from people that are trading it for drugs because it's got a significant value… On the drug side we're starting to see a lot more narcotics, so it's not the low-end stuff. I think there's some heroin, there's a lot of crack cocaine and those types of drugs."

Investigators in Saskatchewan found that offenders in a northern community "were buying fish, and tons of it. And we knew the guy was one of the big drug runners. He admitted to us that that he would exchange fish [in Canada]. He admitted it, but we never saw it or proved it. But it made sense because he was the main drug seller up in that community." Bartering drugs for wildlife is likely a culturally specific practice as experts in another province stated they do not see it very often.

The drug-wildlife trafficking link has been found in every location that Canadian interviewees were based in, although in some cases the links were not well understood. Convergence between IWT and drug trafficking was reported in five Canadian provinces and

territories. Drug trafficking in Canada has been linked to illegal trade in eels, sturgeon (meat and caviar), rhino horn, elephant ivory, corals, zebras, kangaroos, turtles, moose, lobster, and bear parts. In some cases, the drug-wildlife trafficking link is a relatively small-scale operation. For example, "there's been a few examples where someone [engaged in IWT] was charged for drug trafficking and arrested and it was mostly cannabis. Sometimes, opioids like fentanyl." One example mentioned by interviewees was of a drug trafficker who was sentenced in Canada for weapons offenses, but was also found to be involved in smuggling endangered turtles to Toronto from outside of Canada. However, in other cases this appears to be a long-standing, large-scale, and well-integrated convergence. One interviewee mentioned that on the west coast of Canada, "individuals suspected of being involved in the IWT have connections to other crimes, including drug trafficking, fraud, money laundering and tax evasion and appear to be associates of a member of [a] known Asian organised crime group." Turning to the east coast, one expert said, "we know that organised crime has bought some small boats in the Maritimes, and we think that this is to facilitate the drug business. But I think it's also a nice way to fish, actually do some illegal fishing and then put it on the market because well, I mean, it pays." One Canadian expert suggested this convergence was not too widespread, suggesting "it seems if they're involved in import and export of drugs, that it's relatively easy for them to also move into wildlife as a secondary revenue stream. But we don't see a lot of specialization in the IWT in relation to the drug trafficking networks."

4.4.2 Mixed Illegal Drug/Wildlife Products

Another way that drug trafficking can relate to wildlife trafficking is through product convergence. One South African investigator noted that they received information that a triad had bought a South African farm for the purposes of trafficking in lion bones and lion products. "Lion cake" is made for traditional Asian medicine by chopping up a lion carcass and boiling it for up to ten days to get the gelatin out of the joints, which then hardens as it dries. Interviewees who infiltrated and then raided the farm found 365 kgs of lion cake at one property, and also found 50 litres of opium; on the scene, law enforcement found "heroin, poppies, and everything." The investigators learned that the traffickers were mixing the heroin with the lion cake. According to the interviewees, the foreign Asian member of the group that organised this business was not there at the time of the raid and took a flight out to their home country the same night.



Figure 4.1. A photograph depicting “lion cake,” a mix of processed lion parts and heroin (photograph by Michelle Anagnostou, South Africa).

4.4.3 Poachers Using Illegal Drugs

Interviewees reported an additional connection between drug and wildlife trafficking where illegal drugs are used by individuals involved in illegal wildlife harvest/poaching. Although cannabis is the most commonly used drug by illegal wildlife harvesters, including pangolin poachers, abalone divers, and rhino poachers, cocaine and methamphetamine are also used. Interviewees mentioned that, in rhino poaching, illegal drugs are often used as an aid in poaching. As one interviewee explained,

> "a lot of them have found with [cannabis] on them. And we ask them during the debrief 'Are you not scared?' They say they're not scared of the animals. They're scared of rangers… But for their ability to walk 30-40 kilometers a day in the park in mid-summer, they admit they are on painkillers and weed and that gives them power they just go like a Boeing. They mix the weed with something, it's called nyaope [a common and potent South African street drug] and that makes them like go on for hours."

Other interviewees stated that it was "quite common" for poachers to use marijuana, amphetamines or "uppers" to keep themselves moving in the bush. Investigators noted that this is usually at a small scale and not a significant concern from an organised crime perspective. In what was perhaps a one-off event, "a vehicle was found with a weapon that was used in an armed robbery, and we found a little packet of crystal meth with them, which is very unusual. And we realised it's because they operate on that, and crystal meth keeps them awake. It also makes them a little bit more irrational and dangerous." Two interviewees thought there may be a particularly strong link between reptile traffickers and cocaine use, as reptile traffickers being habitual cocaine users has been found in a few separate criminal cases. One theorised, "maybe it's an adrenaline thing. I don't really know."

4.4.4 Organised Crime as Consumers of Wildlife

Multiple interviewees described a link between drug trafficking/traffickers and personal ownership of illegal wildlife for protection or as a status symbol. A Canadian expert said that,

> "Even to this day, organised crime without a doubt would be the ones when we get a call about a tiger or lion or some large exotic hot snake or Burmese python or something like that. Oftentimes, it is related to organised crime. These individuals have dangerous animals for status and possibly for protection. There may be a dangerous animal protecting their crop or door or their stash. And, of course, there's nothing more fearful that you can instill in another organised crime member who's trying to steal your stuff than knowing you might be injured or attacked or killed by a tiger or lion. That still exists, and it will probably always will."

Several interviewees noted seeing links between large drug production operations and dangerous animals such as crocodiles, caiman, jaguars, lions, tigers, leopards, lynxes, and snakes. Regarding ownership of dangerous exotics, law enforcement in British Colombia in particular noted that "it's not uncommon for people we investigate to be involved in other criminality."

4.4.5 Sex Trafficking

Thirty-six interviewees identified a link between wildlife trafficking and human trafficking. In particular, the convergence between wildlife trafficking and sex trafficking was reported in all three jurisdictions. One South African interviewee noted that they see a convergence between sex trafficking and wildlife trafficking of the networks at high levels of organised criminality. With regards to rhino trafficking, this interviewee said,

> "it's very wrapped up in the migrant trade. So that would be migrants coming from Mozambique into South Africa. And other countries. Then they would go on to

> Europe from South Africa, or they would stay in South Africa. But these [human] trafficking networks are facilitating the rhino horn trade by [using the same] transportation. The human trafficking is usually with young women and a lot of times they're kidnapped for ransom. But generally, that doesn't go very well so they end up being trafficked… One of my investigations overlapped with a very specific investigation in Swaziland where the traffickers were giving drugs to young women, getting them in compromised situations, and then they were flying them out of the country or either promising them jobs as models or others. These were usually young women with a little bit more means than your average villager. A little bit more sophisticated, better educated, better families, so that they came with a certain appeal…They'd be doped and taken over to Europe. It's all around that Mozambique, South Africa, Swaziland triad area. And they're all interrelated."

An interviewee described another case of a convicted rhino trafficker who was heavily involved in sex trafficking with the help of his wife. The investigator said, they were "just evil."

Another interviewee stated that, similarly, in Hong Kong they have seen the same middlemen involved in drug trafficking and sex trafficking: "The common denominator is the transport route. It is geographic opportunism. Hong Kong is an origin point and definitely a transit point for sex trafficking." In Canada, one network is involved in both IWT and human trafficking for prostitution and human organ or body part trade. An interviewee said, "we see that link a lot with sea cucumbers, ginseng, traditional medicines. Apparently there's also a

lively trade in human placentas." Other Canadian experts noted that links between wildlife trafficking and human and sex trafficking appear to be more "one offs" where someone who is engaged in IWT pays for the services of a woman who has been trafficked; "but it doesn't seem like they're involved in the actual trafficking themselves, rather, it's just a criminal that's paying for a prostitute."

4.4.6 Child Prostitution

Links between child prostitution and IWT were reported in South Africa and Canada. In South Africa, one expert described:

> "For instance, [name redacted]. His biggest business was loan sharking, doing cash loans at exorbitant interest rates, like 40%. People go to him out of desperation, borrow money. And then obviously, after a month or two, they can't repay. Then he says, 'Okay, bring me this, do this job.' And that is people who don't want to get involved in crime, but they basically get forced into that. And then it becomes an absolute ransom situation. When they did a search and seizure in his house, it was over 300 bank cards that he confiscated. When you get a loan from him, he takes your bank card, within the month he takes the money out and anything else, cleans the account. And then the other thing that he did was child prostitution. Huge. It was a huge business. And again, it was people without any money. He'll say, 'oh, no, it's okay. You have got a daughter. Bring her for the weekend.' There was a whole business he was running to Joburg. It was mostly foreign nationals who

would order kids, come up for a weekend, prostitute them out and bring them back. It's disgusting."

Another investigator described looking through a rhino poacher's phone and seeing child pornography. Another interviewee described an operation "where we, from the police side, sold rhino horn. We were agents to [redacted] people, they were involved in smuggling of children from South Africa to the Far East, as part of sex things and prostitution. Child pornography, child sexual workers, and they basically exchange people for rhino horn. So, we sold rhino horn to them, and they were heavily involved in smuggling of people over to Asia."

In Canada, an expert explained that they have major issues with illegal outfitting companies (i.e., companies that are paid by clients to help ensure hunting success) in their jurisdiction, and that "there's a lot of illegal drugs that are typically associated with them. And when they bring up clients - apparently it's not uncommon - they go, 'hey, do you want a boy? Or you want a girl for the evening?' and when I say, 'a boy and a girl,' I mean a *boy* and a *girl*." Similarly, another Canadian province has previously found a link during an investigation that started with undercover work by wildlife law enforcers, and then: "the [provincial police] got involved because it was more than wildlife. He [the outfitter] was also trading guns. And then at the end of the day, when they arrested him, he was also done for child pornography or child molestation charges as well. He was into everything. But they're one offs and few and far between, I think."

4.4.7 Trade in Human Body Parts

The illegal trade in human body parts and organs was reported in South Africa and Canada. In South Africa, this mostly relates to use in traditional medicine. One South African national expert said that they have found a link between IWT and the trade in human body parts: "we've started investigations with body parts and then found rhino horn links. Body parts for traditional medicine, chop an arm off, chop genitals off. A group gets involved in everything... Organ trafficking, body parts, and they often dig graves up from Mozambique to South Africa, South Africa to Mozambique. It's not uncommon." Another interviewee said that, "organ trade, definitely. In Africa, people really believe in traditional healing medicines… there's a direct correspondence between the muti market [where locals buy animals and animal parts used in traditional healing and witchcraft], and if they can get a hold of rhino shavings, pangolin scales, and human parts - yes of course." Another South African interviewee who had reviewed wildlife traffickers' phones, said:

> "I've seen murder on there. I've seen people tied up on there. We get white magic and black magic. And in this country, white magic is traditional healers, herbal stuff, pangolin scales. Black magic is human body parts, sourcing animals like snakes that are living that they carry around them, they pull their teeth, having a pet baboon, they pull their teeth. I've seen that on the phones. I've seen images of a woman being slaughtered and her blood being drained into a bucket. On the same phone, I've seen blood diamonds, lots of other animals being trafficked, rare species being trafficked. So, they're not dealing just in a specific arena. It's everything that's illegal. It doesn't matter what it is. The higher the price, the more illegal it is, the

> more and more we find the same syndicates working. The rhino syndicates are definitely emerging into the pangolin trade. I also think a lot of those syndicates are behind abalone and are encroaching *Conophytum* stone plants now. It's the same people. It's driven by the same underworld."

In Canada, the link between IWT and the trade in human body parts is for a different type of consumer, people who are collectors of 'oddities.' An expert explained, "there's an issue with human remains being dug out of places that they shouldn't be dug out of and being sold on the black market. And we see a lot of that kind of tied in with the oddities trade. The oddities trade could include reptiles, dead species of reptiles that are embalmed, bird feathers, bird parts, bird bones, a lot of reptile and bird bones are kind of commingled with the human bone trade and human organ trade. And depending on where the human remains are dug out of, they could be considered cultural objects."

The research also revealed similar practices in locations outside of the three main jurisdictions of focus. In West Africa for example, the overlap between the trade in human body parts and wildlife parts also exists. An investigator explained that, "we were going after ivory traffickers, and we got somebody also trafficking in human remains at the same time. Not just digging up graves. These were either fresh corpses, or having conversations about 'who do we want to be killed for that?' It was huge amounts of money… This network was in Cameroon, and Congo… Uganda is even worse in that regard. And even trafficking of children for that."

4.4.8 Migrant Smuggling

The convergence between IWT and migrant smuggling was clearly evident to the majority of interviewees in South Africa with common responses being, "absolutely," "definitely," and "without a doubt" (n=12). Many interviewees noted that pangolin traffickers are often Zimbabweans that have illegally crossed the border. A rhino trafficking expert stated that, "one of the vehicles they stopped is a known [rhino] poacher who comes and goes, and he had eight people in the back, of which six of the eight were all illegals that he had just brought through. And obviously, was planning to use them for a reason. So yes, definitely migrant smuggling, particularly Mozambicans coming in." Experts noted that there are offenders who smuggle people into South Africa solely for the purpose of supplying people who become rhino poachers, mainly because they are 'off the books' (i.e., unknown to local law enforcement). And these people smugglers would be connected to a bigger syndicate, but their role is entirely to supply skills and people to the syndicate because "you hire other criminals to assist you as a criminal in areas where you lack expertise." In turn, illegal migrants will use a rhino horn to pay off their debt for the smuggling.

4.4.9 Coerced, Forced and Bonded Labour

Variations of coerced, forced, and bonded labour were linked to IWT in all three jurisdictions. Multiple interviewees in South Africa described that some people are coerced under threat of violence into crossing national borders to undertake rhino poaching. While most rural people are thought to be eager to get involved in IWT given the high profits, many get involved involuntary. As one interviewee stated, it is "not a huge percentage... But if you

go enough to the courts and attend the sessions, you realize some of these people were forced to do this. And they've walked hundreds of kilometres, and maybe back in Mozambique, their family has literally got the threat of a firearm to their head. They know where their kids go to school and so on." There is strong evidence to suggest that the rhino horn mules are also being forced to participate.

The link between forced labour and IWT has been seen in Canada as well. In Canada, one interviewee noted that they have seen indicators of forced labour linked to illegal elk trade, such as people who do not have their government documents on them because they are held by somebody else, and individuals who are unable to articulate where they live. The same interviewee mentioned that enforcement has gone, "onto the premise and there's people sleeping on site, with no windows… That also involves ginseng, sea cucumbers, harp seal oil, and then just usual traditional medicines." Similarly, there was a case of trafficking processed ivory parts into Canada and according to a Canadian interviewee, on the African sourcing side, "they used drug addicts to do all the work, and then they wouldn't pay them with money, they'd pay them with narcotics."

Coerced labour of wildlife smugglers also has ties to Hong Kong. Actors in Hong Kong and China may be tricking mules into smuggling illegal wildlife for them, while the smugglers have no real information about the next stage. A Hong Kong interviewee described a shipment,

> "that was supposed to be computer parts, but it turned out to be totoaba [an endangered Gulf of California fish prized for its swim bladder]… The defendant claimed that she was only accepting the parcel for her boss. But it was a tricky situation because she didn't actually have any contracts to show that she was working for this company. And she claimed that she was taking up the office space for her own company, which was involved in trading computer parts. And she partnered up with this new person who also was trading computer parts. But he lived in mainland China and often would tell her to 'please accept my parcel,' and deliver it to whoever he needed to be delivered to."

Actors in China may even trick individuals into setting up companies in other countries that can be used for money laundering and concealing import-exports.

4.4.10 Illegal Alcohol Trade

Links between illegal alcohol trade and IWT were found in all three jurisdictions. In South Africa, illegal alcohol trade has reportedly been clearly linked to rhino horn trafficking. Several Hong Kong experts noted that, because wine and alcohol have high taxes now, they are often smuggled into China alongside CITES listed wildlife, typically fish maw, shark fin, sea cucumber, seahorses, and live turtles and reptiles. Similarly, two Canadian interviewees in different parts of the country referred to a Canadian-American wildlife trafficking operation which involved bringing Canadian wildlife south across the border for sale in the United States, while illegally bringing alcohol up north on return, although both noted that it is "not a common occurrence." Another Canadian interviewee described working in law

enforcement in a coastal fishing community where the police would often do joint operations: "it could be one person doing both things [illegally harvesting wildlife and trading in illegal alcohol]. They could be out hauling out crab pots, but at the same time they've got somebody coming in a boat with a load of alcohol that they're going to take aboard and bring in. So, it's an easier way to bring it in when there's no customs people there. So that does happen."

4.4.11 Firearms Offenses

Links between firearms offenses and IWT were found in all three jurisdictions (n=38), but the ways these links played out in each location were very different, reflecting the vastly different contexts of the cases. In South Africa, arms trafficking and illegal firearm use is common amongst abalone traffickers, and interviewees mentioned that the police are sometimes complicit in these crimes. "Even the guys that are looking after the goods [abalone], looking after the divers, some of the divers will be armed with firearms." Police-issued weapons are sometimes used, while rangers' rifles have stricter controls and are rarely seen. Some policemen actively approach criminals and rent their own weapons out. Firearms that have been confiscated by police sometimes get leaked back into the hands of wildlife traffickers. One expert said that, "there have been lots and lots of instances where firearms have been booked into the blue safes, what we call the SAP 13 store where the [seized gun] exhibits go in. You will find a new [animal] carcass and do ballistics testing on it, and it will come out to the same weapon that was seized previously. And you go back there [to the SAP 13 store] and then that firearm is not the store anymore."

In addition, illegal firearms are often sourced from the many house break-ins and farm attacks in South Africa. Farmers are isolated in remote locations, and as explained by an interviewee, "they're easy targets. So they [criminals who also engage in IWT] will overwhelm them, kill them, assault them, because on farms there are always firearms, rifles, and now they steal them. Even normal housebreaking: they break open the safe and they get it." One expert noted that many of the victims of farm attacks will tell you that when the criminals find weapons, the first thing they ask is if it can be used to shoot a rhino. Farm attacks and housebreak-ins are also strongly correlated with abalone trafficking. According to one interviewee, abalone traffickers need many weapons, "because with the gangs, it's all about territory. And ‘this is my area; how dare you poach here.’ ‘This is my area; how dare you sell drugs here.’ So, it's protecting their territory. 'Oh. You robbed my leader? We will get you back.'" Illegal weapons are also exchanged for illegal wildlife products and vice versa. For example, illegally obtained abalone can be bartered for illegally obtained guns. One interviewed expert stated, "I haven't heard of firearms from overseas coming in. It's mostly whatever is local in South Africa as a means of barter."

Rhino horn traffickers almost inevitably use illegal weapons for protection and for poaching. One long-term expert stated, "I have never had a case in which the firearms used in rhino poaching were not illegal." Another confirmed, "99% of the time, it's illegal firearms." However, the special caliber of weapon required to bring down a rhino means that the guns are a key illegal commodity for a rhino trafficking network. Interviewees mentioned that

there are individuals in the syndicate who specialize in stockpiling weapons, and they rent them out for rhino poaching, armed robberies, or cash-in-transit heists, and to different groups as needed, acting as a facilitator of crime convergence. Multiple interviewees described recent incidents where they tracked rhino traffickers' vehicles, arrested the individuals, recovered weapons hidden in their cars, and traced those weapons back to cash-in-transit heists.

In Hong Kong, one interviewee thought that previously, American weapons were being trafficked from Taiwan and that it was by the same groups moving ivory into Taiwan and China, while running guns in the other direction. An interviewee claimed that [Triad name redacted] "have been involved in smuggling ivory into Hong Kong. I know that for a fact." The evidence for this convergence was collected years ago so this may be a historic convergence.

In Canada, interviewees mentioned a link between individuals who have been banned from owning firearms and that person engaging in poaching using illegally obtained firearms. An interviewee in one of the Canadian territories stated that,

> "quite often we're dealing with people that are also prohibited from possessing firearms. For whatever reason, the person's been charged criminally for other offenses by the [police], and they've been prohibited for life or for a certain amount of time from possessing firearms. And they'll just disregard that completely and go out and purchase a bunch of firearms again, just so that they can poach. So that that

> is happening pretty regularly with us and pretty much every time we do a search warrant on our residents, per our wildlife investigation stuff, there'll be handguns recovered - illegal handguns and other weapons and stuff like that. We even did a search on a guy's house, and it turned out to be a drug dealer as well and he had a loaded machine gun under his bed and a bunch of drugs and drug paraphernalia."

Similar to the South African rifle renting scenario among rhino trafficking groups, when a law enforcement official in a different Canadian province was asked about links between wildlife barter trade and illegal arms trade, they responded, "I think that's quite common. You see that a lot in a First Nations community where a lot of people are either firearms prohibited, [or] they can't easily obtain firearms. So, they'll trade access to firearms either on a temporary basis or permanently for the purposes of going to kill the wildlife in order for them to sell it either in payment of those firearms or in addition to that payment to sell it to make money elsewhere." Three other Canadian experts noted specific cases where a wildlife trafficker was also trafficking in firearms, but noted that these may be one-off examples and not particularly common.

4.4.12 Stolen Vehicles

The link to vehicle theft and smuggling was reported only in South Africa. The convergence between vehicle smuggling and rhino horn trafficking in South Africa is so strong that authorities are using stolen vehicles to monitor poaching (n=9). One interviewee said that "there's been a few cases of brand-new vehicles caught on license plate recognition cameras

with false plates being used for poaching and transporting poaching groups to other provinces or other reserves. It's become such a tool of the trade." One car smuggler confessed to stealing cars from Johannesburg and Pretoria, and then swapping them for car parts and bringing them to Mozambique to sell them there. An expert explained, "so that's what all these poachers are driving. The people involved in the trade in Mozambique, they're going in, buying these vehicles from a car dealership in Maputo. They're buying it from the smuggler, the vehicle thief. They're being stolen from South Africa." Interviewees described a case where a stolen vehicle was seized during a roadblock... Investigators then were able to immediately link the offender to a lot of the rhino poaching groups in the area, all of whom were connected to one of South Africa's major rhino trafficking "kingpins." Similarly, stolen vehicles used by rhino poachers have also been linked to large, organised mall robberies. Stolen vehicles have also been used to barter for rhino horn in South Africa. "There is a guy with a scrap yard in the East Rand, Joburg. And we know that scrap yard is just a way of smuggling everything. So, we even exchanged rhino horn for stolen cars at one stage. Basically, we gave them rhino horn and they gave us two stolen cars." Another expert noted that, "these big guys in the Bruma, Gauteng area - those level three guys receiving rhino horn, they drive the fanciest cars... Sometimes it would be like 'you buy me a car, and I'll give you this rhino horn because I don't want my name associated with the purchasing of that car.'"

4.4.13 Counterfeit and Pirated Goods

Comprehensive evidence (n=37) was found in South Africa and Hong Kong to link counterfeit and pirated goods trade to IWT, and only minor links were found in Canada. Counterfeit and pirated goods were found to be linked to many of South Africa's illegally traded wildlife species, including abalone, pangolin, and rhino horn. For example, the person supplying drugs to abalone traffickers will deliver the drugs to people who have food or clothing stands where it will be sold. Investigators noted that this is difficulty to trace, but perhaps not a common convergence. One interviewee said, "so it's mostly apparel, and we've got a lot of fake or counterfeit well-known branded clothing." Stolen cell phones and electronics are also commonly used by abalone traffickers. For example, "me and you are working together as divers. One of us might have a phone that was previously stolen because we got it cheaper at the drug house where we are buying our drugs and where we sell the abalone to." In the same region, another expert also thought there is a link with rock lobster because they find counterfeit goods at many of the businesses selling rock lobster when they do inspections. That interviewee said they mainly find counterfeit clothing, shoes, and videogames. Experts also noted a link with pangolins, "I have found a couple of these guys selling pangolins are also selling stolen goods, electronic goods." Another interviewee mentioned infiltrating an organised network trafficking in millions of rand worth of counterfeit Zimbabwean cigarettes that also offered to sell pangolins, stating to them, "we've got both." Two additional interviewees had direct evidence of rhino horn traffickers being heavily involved in cigarette smuggling in South Africa. Further, an expert noted that in Europe, counterfeit apparel has been used as a cover for trade in illegal rhino horn, such as in

Czech Republic or Germany. "It was overlapping Vietnamese and Chinese. It wasn't pure Vietnamese. It wasn't pure Chinese. It was a lot of overlapping together. They would use the cover of their counterfeit goods markets in order to move the horn or the pangolin... It's convergence at the marketing selling level."

Far from being just a South African phenomenon, trade in counterfeit and pirated goods was found to actually connect the illegal trade of wildlife between Africa and Hong Kong. Illegally traded electronics and other goods are used to pay for illegally traded wildlife from Africa. For example, a wildlife trafficker requested that the interviewee pay for a shipment of ivory out of Uganda with cellphones from Hong Kong. The interviewee said, "he even gave me the name of the company that that he wanted it to come from, because apparently he dealt with them before." Hong Kong also sees the commingling of wildlife and counterfeit goods, including electronics and cigarettes, in parallel trafficking efforts between Hong Kong and China. One interviewee said they see it, "constantly... apparel and accessories, electronics, waste electronics, new electronics, pharmaceuticals. Constantly. Health products, skincare regimens, whatever, all of that. It comes through."

The majority of Hong Kong interviewees noted multiple seizures of commingled mixed wildlife products and mixed luxury goods that were being smuggled via speedboats to China to avoid tariffs. Food and meat products, electronics, smart phones, computer parts, pharmaceutical products, luxury handbags, clothes, shoes, watches, alcohol, and laptops were all identified as having been smuggled on speedboats alongside illegal wildlife, in some cases

this included turtles, succulents, fish maw, shark fin, and other seafood. "It's more the small boxes of stuff that they can chuck onto a boat quickly and disappear with before the Marine Police arrive." Most interviewees felt that these convergences were simply because the smuggling mules operating trucks and boats across to mainland China work for larger syndicates that will move whatever goods they are paid to.

In Canada, counterfeit cigarettes, cosmetics, and pharmaceuticals have been linked to the same networks involved in the illegal trade in wildlife for traditional foods and traditional Asian medicines. Another convergence point between illegal trade in cigarettes and wildlife has been seen in Canada, where they found a cigarette trafficker was also illegally trading in fish, although as only one person was referenced by the interviewee, this case may be an uncommon and small-scale operation. The counterfeit-wildlife trafficking convergence was not raised by many interviewees and may be much less prevalent than in South Africa or Hong Kong.

4.4.14 Illegal Trade in Mined Resources

Thirty-three interviewees described a convergence between illegal trade in wildlife and mined resources. The most significant findings on a link between illegal trade in minerals and metals comes from South Africa. Wildlife trafficking syndicates in South Africa have been linked to illegal trade in diamonds, gold, uranium, copper, chrome, silver, fuel, and coal. One rhino trafficking expert said that they are "definitely" seeing linkages to illegal mining, and that the illegal mines are often being used to hide the illegal guns that are being

used for cash-in-transit heists and rhino poaching. They further explained that, "the guys dealing with the gold are also involved with illegal firearms because they are fiercely protecting the areas where they are illegally digging the gold. Very territorial. And because there's firearms involved, it's now linked to cash-in-transit, and the cash-in-transit is now linked to rhino [poaching]." Another interviewee explained a case where 50 assault rifles were being stored in an illegal coal mine: "They dig the coal and instead of it providing [South Africa's] power, it gets sidetracked to an illegal site where it just gets stored and exported illegally." The individuals identified from this illegal mining venture are people already known in the rhino poaching sphere. The interviewee also said, "when the rhino is a bit slow on money, they go cash-in-transit. With the cash-in-transit robberies, there's a lot of cash quickly which has to be divided between a number of people. Rhino poaching groups are maybe three people at the most. But the cash-in-transit, they're bigger groups of 9-10 people because you're going to be shooting at the police, they're going to take down the vehicle. Sometimes it's private security vehicles, and that's got to be stopped or shot at. And so now that money is going to be divided between 10 people, and they do each other in... So, you've got gold, illegal mining, and that links to firearms and [rhino poaching]. And the gold and the coal are linked. And that is linked with firearms as well."

Many South African interviewees confirmed a link between wildlife (especially succulents), diamond, and gold trafficking in the Northern Cape, which is an area,

> "very rich in diamonds, so you have a lot of diamond smuggling. And they refer to succulents as green diamonds because they are involved in the illegal diamond

> trade. And they are involved in succulents because what's the risk? Why not? The risk is so much lower. You just have poverty-stricken guys at a low level who will do anything for money. And the abalone as well. The diamonds, the abalone, and the succulents. Even in the Western Cape, because some of it comes down to Cape Town once they've obtained it up in the Northern Cape."

Cross-border diamond smuggling with Angola has also been linked to abalone trafficking, and some of the gold and blood diamond smugglers have also been found with pangolins.

Hong Kong interviewees mentioned much more limited connections between IWT and illegal mineral resources trade. One interviewee mentioned that some people importing ivory were thought to be doing so illegally "inside consignments of semi-precious stones… So that's how I always thought that these guys were bringing in ivory through the diplomatic bag, bringing in all consignments of opals or, lots of different kinds of semi-precious stones and put a bit of ivory in it, and then declare it as that [semi-precious stones] to evade the protection that way. So certainly, yes. The entire minerals and semi-precious stones trade has been used to mask the illegal [wildlife] trade in Hong Kong."

Strong ties between wildlife trafficking and illegal minerals/mineral resources trafficking were identified by global experts in Central and West Africa, South Asia, and Latin America.

4.4.15 Other Crimes

Interviewees in all three jurisdictions also identified ‘other’ crimes that did not fit neatly into the categories already discussed. South Africa has had a couple of incidents where rhino poaching indirectly "touched" terrorism. Interviewees in both Hong Kong and Canada identified indirect links between IWT within their borders and individuals involved in armed conflicts in other regions, including Southeast Asia.

By its nature, illegal hunting and harvesting of wildlife occurs in rural and remote areas. In South Africa, Hong Kong, and Canada, poachers have been involved in breaking and entering people's homes and theft. In both Canada and South Africa this has included breaking into people's homes and stealing firearms. Interviewees identified one-off cases where wildlife trafficking converged with illegal trade in (non-wildlife) art and cultural objects, but no interviewees were aware of any regular or consistent ties in these three locations.

4.4.16 Are Wildlife Trafficking Networks Generally Diversified or Specialised?

While organised IWT and crime convergence is not a new phenomenon, the research attempted to determine the current extent of these convergences by examining whether wildlife trafficking networks are generally diversified or specialised. A Canadian interviewee explained that, "I think you're seeing more complex playbooks that organised groups are operating with, but you're also seeing more blatant singular events that that don't involve a larger group of people." The interviewee further clarified that there are ongoing examples in Canada of international wildlife trafficking where the individuals have "immediate ties to

higher level organised Asian organised crime… including direct family members to the highest players." Experts in South Africa and Hong Kong provided specific examples of networks that have switched opportunistically the commodity being smuggled based on demand and law enforcement pressure. For example, succulents in South Africa are often found near mineral rich deposits where mining takes place. When the harvesters cannot harvest succulents, or law enforcement 'ramps up', they focus on diamonds or gold and swap between those two (i.e., with increased law enforcement activity regarding succulents, diamond trafficking has now become the less risky activity). One interviewee said that, "if you're a smuggler, the commodity might change, but you will remain a smuggler. So, if I smuggle abalone today and the price is down, and suddenly the price of rhino horn is up, let's focus for a while on rhino. And that also goes for succulents and animals like in reptiles, geckos, spiders, beetles."

Although there was not 100% agreement, seven interviewees stated that they are not seeing a lot of convergence, and that they think wildlife traffickers are mostly specialised. Five interviewees thought traffickers mostly diversify within IWT, and 39 interviewees specifically stated that crime convergence is the norm within their jurisdiction. Interviewees who had direct knowledge of cases observed that whether organised IWT converges with other organised crime depends on natural geography (n=11), the species/wildlife product being illegally traded (n=10), the nature of the organised criminal network itself (n=29), and/or specific individuals at certain stages of the supply chain (e.g., a common trusted

transporter or corrupt actor; n=23). As interviewees often only see their stage of the supply chain, all of these factors are potentially at play.

For instance, geography can play a large role, particularly at the source and transit stage. In source regions, such as South Africa, wildlife traffickers may be involved in illegal harvesting and trade in any other high-value commodity that exist in that same location, such as succulents and diamonds. Border communities, such as communities near the South Africa-Mozambique border and Kruger National Park, or communities that straddle the border between Ontario and New York State, can become hotspots for smuggling any type of commodity across those international borders, particularly where colonial borders split Indigenous communities, or where border controls are weak. The species/product of wildlife itself can play a role in convergence, as the species or product can have certain characteristics that make it likely to converge with other types of trafficking. For instance, timber and seafood are easily used to conceal other illicit commodities. Timber is easy to hide contraband in, while seafood is useful for masking the smell of drugs. The wildlife trading process itself can also play a role, for instance where shark finning or fishing vessels are ideal for drug transhipments.

It is also clear from interviews that the individual organised crime network is also a major determinant of convergence. Criminal networks can have varying levels of opportunism and risk aversion, as well as catering to different types of clienteles. These factors also interplay with each other. Organised crime networks can ‘own’ a certain transnational trafficking route

and the customs and border agencies along the way, and will use it to move any commodity with impunity. Organised crime networks that are more risk averse may feel most comfortable getting involved mainly in IWT given the low risks of detection and penalties if caught. Some networks have chosen to remain involved only in wildlife trade, as they felt drug trafficking was too risky. Established organised crime networks that are operating with total impunity, for example drug trafficking networks in a region with systemic corruption, may not feel the need to get involved in IWT, unless it can be at least as profitable as drugs or other high profit ventures. Finally, at the distribution end, crime convergence may be dependent on certain "communities" of buyers. For instance, in Canada there is a community of people who are collectors of oddities, whether it be exotic animal parts, or human body parts. Convergence can occur on the ground in source locations with whatever natural resources are available and in demand, while at the other end of the supply chain, convergence may be more clearly differentiated by interest group (e.g., traditional medicines, oddities, luxury products, etc.).

Interviewees who have led large investigations tended to believe that it would be rare to not see convergence. For example, one interviewee said, "the biggest mistake we can make is to look at wildlife trafficking as an off-chance kind of thing. Syndicates will think okay, if the police are locking down on this crime. What do we do offseason? Let's go for wildlife. And then just modify as the market changes. The priority is whatever is the most profitable." Importantly, crime convergence does not necessarily mean that both or either crime involved is highly organised. Convergences can occur between different levels of different types of trafficking (e.g., Table 4.1).

Table 4.1. Examples illustrating that crime convergences can occur at varying levels of sophistication and does not always equate to highly organised crime.

		Illegal Trade in Wildlife	
		Low Sophistication	High Sophistication
Illegal Trade in Drugs	High Sophistication	e.g., profitable drug trafficker who also poaches wildlife for fun	e.g., international money launderer for both drug and wildlife traffickers
	Low Sophistication	e.g., poachers who are drug users/ dealers	e.g., profitable wildlife trafficker who uses cocaine

Other interviewees noted that, due to their jurisdiction, they have not been able to develop a deeper understanding of convergence, as those more complex or politically important cases would be handed off from wildlife law enforcement to another type of policing agency once convergence was identified, and possibly not followed up on. Convergence can also be difficult to detect unless customs find the physical commingling or parallel trafficking of illicit commodities, and so crime convergence may go undetected. A few interviewees noted examples where wildlife law enforcement was investigating an offender for wildlife trafficking, while drug enforcement was simultaneously investigating the same offender for

drug trafficking and neither agency knew about the other's investigation. These situations highlight deconfliction processes and systems as a possible area for improvement. In addition, they highlight that crime convergence likely goes undetected more often than not, given the siloed approach of law enforcement agencies.

4.5 Conclusions

The present study provides original evidence-based findings on the connections between IWT and various forms of serious and organised crime globally. The results of this study support the notion that IWT indeed converges with other organised crime, although the duration, extent, and nature of the convergence differs based on several factors. This study also illustrates that organised IWT, and crime convergence can be a challenge for high-income Global North countries. In addition, this research identified a new type of crime convergence: product convergence, a product composed of multiple types of illegal substances, including a mix of illegal drug and wildlife substances.

Convergences between IWT and other types of serious and organised crime activities can occur at any stage of any of the supply chains involved. At the lowest/sourcing level, IWT often relates to other types of low-level crimes, including illegal drug use, breaking and entering, and illegally obtained firearms. At the international trafficking level, some organised crime syndicates have well-established routes and infrastructure that they can use for trafficking in drugs, arms, and people, including distribution networks, money laundering apparatuses, and marketing tactics. These syndicates can get involved in wildlife

opportunistically if high-value wildlife exists in their territory. Other organised wildlife traffickers have been operating successfully for decades, often shielded by corruption, and have eventually decided to expand into other types of trafficking to maximise profits.

Experts in all three jurisdictions noted examples where offenders have shifted opportunistically between crime types based on shifting market dynamics, law enforcement pressure, and wildlife availability. Crimes can converge across varying levels of sophistication. For example, successful drug traffickers in Canada may poach wildlife for fun or personal consumption, while successful reptile traffickers may use illegal drugs. Barter trade of goods can also occur at multiple levels of sophistication. For example, rural illegal hunters who trade illegal drugs for illegally hunted wildlife. At a higher level, international syndicates have been known to exchange large quantities of drugs, for example, for large quantities of high-value wildlife as a way of money laundering.

Researchers have suggested that initiatives to address IWT should consider the complexities arising from the interactions between the taxonomic unit being trafficked, the geographic distribution of the taxa, the degree of product transformation (Roberts and Hinsley, 2020). As the counter-wildlife trafficking field advances the development and implementation of evidence-informed interventions, going forward, initiatives should also consider the interactions between various crime types and levels. These complexities underscore the importance of continuous research and enhanced collaboration and information sharing across various sectors, domestic law enforcement agencies, and jurisdictions to effectively

combat wildlife trafficking. Future research should continue to identify nodes with transnational criminal networks that are particularly vulnerable to convergence.

Law enforcement typically takes a siloed approach to crime prevention (Chrustie and Luna, 2023). Interviewees across jurisdictions made it clear that there is a lack of incentivization, formally and informally, to investigate and address crime convergences, and many institutional barriers to breaking down the existing silos. Law enforcement personnel that are focused on each of these crime types are often competing for resources and attention. Each department and unit must focus their limited time and resources on meeting their own mandates. Future research could focus on understanding how to overcome legislative, regulatory, organisation, and political barriers to cooperation on complex organised crimes affecting the environment.

Overall, a range of organised crime activities can relate to IWT, including arms trafficking, sex trafficking, child abuse, migrant smuggling, and illegal trade in human body parts, mined resources, counterfeit and pirated consumer goods, stolen vehicles, alcohol, and drugs. As our understanding of the complexity of crime convergence unfolds, the international community may increasingly appreciate the importance of finding ways to adopt more collaborative approaches.

Chapter 5

Countering international organised wildlife trafficking: Insights from law enforcement personnel on challenges and opportunities

5.1 Overview

International wildlife trafficking represents a significant and complex form of organised crime. This study aimed to understand the challenges and opportunities to countering wildlife trafficking based on the perceptions of wildlife law enforcement personnel and other experts. Interviews were conducted with 112 individuals working to counter wildlife trafficking in South Africa, Hong Kong, and Canada. Interviewees often felt unsupported by their governments and expressed concerns that the issue is inadequately prioritised, under-resourced, and under-staffed. Wildlife law enforcement agencies face a multitude of barriers to sharing information and collaborating within and outside of their borders, including legal barriers, bureaucracy, politics, ego, trust, and fear. Wildlife law enforcers often have difficulty getting support from policing agencies that do not recognize the impacts and severity of wildlife trafficking. Interviewees noted that there is often a reluctance to conduct complex advanced investigations into wildlife trafficking syndicates. In South Africa, the recommended foundational solution was to enhance integrity management and accountability to combat corruption. In Hong Kong, the most recommended solution was raising public awareness to reduce demand. In Canada, experts strongly recommended additional resources, including increased funding, improved access to investigative technologies, and prioritizing

the issue at the highest levels of government. Significant organizational culture and systemic changes are required to effectively combat the innovative strategies of wildlife traffickers.

5.2 Introduction

Wildlife trafficking is a complex global challenge that continues to grow each year. Despite the profound impacts of other types of trafficking activities, wildlife trafficking has been suggested to be the costliest form of organised crime (Doody et al., 2021). The illegal exploitation and trade in wildlife can have far-reaching consequences, including acting as a key driver of biodiversity loss and presenting significant threats to public health, rural livelihoods, human security, ecosystem integrity and resilience, animal suffering, and political legitimacy and accountability (Maxwell et al., 2016). Wildlife is trafficked to meet growing demands for plants and animals as food, medicine, pets and ornamental plants, and goods for adornment, display and demonstration of status (UNODC, 2024). While not all illegal wildlife trade is highly organised, wildlife trafficking is becoming more transnationalised and sophisticated (Gluszek et al., 2021), often converging with other criminal activities (Anagnostou and Doberstein, 2022).

The term “organised crime” often suggests the development of large-scale centralised criminal enterprises, although this is rare in most states (Paoli, 2002). Illegal markets share many similarities with their legal counterparts. Both legal and illegal wildlife trades require brokers, importers, exporters, distributors, wholesalers, retailers, and buyers. However, key differences prevent the conflation of transnational organised crime with multinational

corporations, such as the lack of a formal state apparatuses to secure contracts and sanction violations of agreements. Instead, exchange of illegal goods and services requires trust developed over repeated exchanges (Paoli, 2002). This is one reason why certain tactics can arise, such as the use of violence, and the compartmentalisation of associates. Organised crime entrepreneurs minimize the information available to their employees and customers so that few people have direct, first-hand knowledge of the entrepreneur's involvement, shielding them from law enforcement. They also try to minimize their visibility as a criminal enterprise entirely by prohibiting the use of indiscriminate violence, as it can threaten the longevity of the entire business.

Law enforcement agencies around the world have struggled to combat wildlife trafficking for decades (UNODC, 2024). This is often due to limited resources, capacity, and political will. Illegal wildlife trade is often not considered from an organised crime perspective, but rather as an issue that can be addressed by environmental groups and conservationists. However, when wildlife trafficking is highly organised, it requires targeted and strategic law enforcement interventions (Anagnostou, 2021). Law enforcement agencies must adopt innovative strategies to address the increasing criminal activity in this sector.

Since law enforcement and intelligence personnel often operate in a clandestine way to counter organised crime activities, it can be difficult methodologically to research the barriers they face, and gauge their perceptions on solutions to improve responses to countering organised crime. This study aimed to address this gap by researching perceptions

of the challenges and opportunities in countering organised illegal wildlife trade (i.e., thesis Research Question 4). The research was based primarily on interviews with law enforcement personnel and other experts in three jurisdictions (n=112).

One premise upon which the research was based is the idea that geographic 'hubs of environmental crime' exist (Farelly et. al. 2022); these hubs are global locations where environmental crime is much more prevalent or likely than non-hub location. Components of a hub for environmental crime may include easy land, air, or maritime access; access to trading routes; access to illicit environmental commodities; state corruption and/or acquiescence; autocratic political control; weak domestic law enforcement; and access to illicit financial flows (Farrelly et al., 2022; Spevack, 2021), as well as communities with strong traditions of trading in wildlife. Three locations were selected for this study because they have unique combinations of these components present: South Africa, Hong Kong, and Canada. South Africa is well-documented as having organised criminal elements heavily involved in wildlife trafficking and some of the challenges this poses for mitigating the issue (e.g., Nelson, 2023). Hong Kong is typically considered a transit hub for international illegal wildlife trade and is more anecdotally reported as having organised crime involvement, although prosecutions of key actors are lacking (e.g., ADMCF, 2018; ELI, 2024). Canada has little publicly available reporting on organised wildlife trafficking and the challenges for law enforcement. English is an official language in all three jurisdictions, enabling one-on-one interviews to be conducted without an interpreter. This likely helped interviewees feel more at ease discussing sensitive topics.

This study aimed to understand the obstacles in combating organised wildlife trafficking. This includes the challenges posed by: (1) the use of organised crime tactics by wildlife traffickers, including corruption, violence, and money laundering; as well as (2) organizational, cultural, legal, political, and bureaucratic barriers. This research also aimed to gather expert ideas on how to overcome obstacles and improve efforts to counter organised wildlife trafficking.

5.3 Methods

This qualitative research used semi-structured interviews to gather perceptions of the challenges and solutions to countering organised wildlife trafficking. Interviews were conducted with experts in South Africa (n=35), Hong Kong (n= 34), and Canada (n=31). Purposive, expert, and snowball sampling were used to identify study participants who have in-depth knowledge from analysing, investigating, and prosecuting illegal wildlife trade offenders and networks (Etikan and Bala, 2017; Sharma, 2017). In addition, global experts (n=12) from other countries were selected for interviews for added insights into the wider global context (e.g., United States, China, Nigeria, Mexico, Indonesia, the United Kingdom, Mozambique, and other regional and international experts). Interviews were conducted in-person where possible, although the timeline for fieldwork was limited due to COVID-19 restrictions. Fieldwork took place in March, April, and May 2023 in South Africa, in June, July 2023, and April 2024 in Hong Kong, and intermittently between November 2022 and April 2024 in Canada.

One hundred and twelve individuals participated in the study. Interviewees included law enforcement and intelligence personnel (n=52); non-governmental organisation (NGO) experts (n=28); NGO investigators who directly advance wildlife trafficking investigations (n=8); anti-money laundering specialists, including from financial institutions and financial intelligence units (n=8); members of research institutions (n=7); legal professionals, including prosecutors (n=5); private anti-poaching units (n=3); and staff of intergovernmental organisations (n=1).

All but two interviewees consented to having their interviews audio recorded. Interviews were then transcribed verbatim and reviewed in full at least twice. This study used thematic analysis to manually code responses, categorise data, and identify subthemes and patterns (Saldaña, 2015). This was a non-linear cyclical process of open, axial, and selective coding before constructing theory and interpreting meaning (Williams and Moser, 2019). Open coding was used to identify and organise initial concepts and thematic domains (Williams and Moser, 2019). For example, “we don’t do controlled deliveries as much as we would like” might be initially coded as “international collaboration is challenging.” Axial coding then allowed for the open codes to be refined and for relationships to be identified. For example, “we can’t share information with Country X,” might be coded under “legal and political barriers to information and intelligence sharing.” With selective coding, I could then integrate the data categories into theory creation (Williams and Moser, 2019). For example, “legal and political barriers inhibit the use of collaborative investigation techniques to combat international illegal wildlife trade.”

Results are presented descriptively using direct quotations from interviews, and interviewees are not cited individually by name or job title to ensure anonymity. In addition, interviewee statements that could make the interviewee indirectly identifiable from their unique knowledge were not reported. The researcher also used their discretion to avoid sharing certain results that could potentially be counter-productive if prospective offenders learned of them, such as details of how undercover operators work, or the suspicious activities that financial institutions look for. The results are presented in the following order: the use of various organised crime tactics by wildlife traffickers, the challenges arising from the level of prioritization of the issue, the shortcomings of siloed approaches, a range of additional institutional, cultural, and legal barriers, and a list of solutions ranked by the frequency with which interviewees identified them.

5.4 Results

5.4.1 Organised Crime Tactics: Corruption, Violence, Money Laundering

5.4.1.1 Corruption

Although all South African interviewees noted that there are many people in law enforcement and the judiciary that are smart, passionate, driven, hard-working, and have integrity to dismantle wildlife traffickers, the common sentiment from nearly all interviewees was that corruption in South Africa is systemic. One interviewee said, "it's every step, from a worker on a farm, to farm owners, reserve owners, local police, provincial, national police, traffic departments, airport personnel, courier companies, everyone. Politicians. It is just

everywhere." Others made similar comments: "even prosecutors to a lesser extent, but we have had instances where dockets disappeared." More than one interviewee noted specific individual heads of government departments that have been implicated in illegal wildlife trade in multiple locations around the country. "If you look at how the horns get through the airport, the check-in counter, baggage counter - not just our airport - the whole route they were paying off via Angola to Singapore, via Nigeria to Malaysia." Several interviewees held the opinion that in both Africa and Asia, seizures only get made because someone failed to pay their taxes to the port authorities or the customs agencies to get their shipment through undetected. And if the traffickers tried to save some money, their shipment would be intercepted. Multiple interviewees also mentioned that "seizures get sold through the backdoor once they've been seized and re-introduced. If you want to do business, then you pay your way through, and you'll be okay." A member of an abalone poaching community stated, "when they confiscate fish, that is the little bit that they confiscate. Maybe the 100 kilos they confiscated and then the 400 kilos go past, because they need to show some statistics. If you count it and see how many confiscated abalone, that is not even a third of what is being poached at the moment." Similarly, a few interviewees felt that when wildlife traffickers are arrested and convicted, it is only because they are no longer considered useful to the network, and someone at a higher level has decided that they are dispensable.

Interviewees often expressed sympathetic views towards corruption at the ranger level. As one interviewee noted, "their families are threatened, and the rangers and their families live

in the town. But they're out for 30 days, or 23 days at a time in the bush. So, they can't make the arrests because their families will be in jeopardy. So, there's all these games being played where they just pretend to be trying to catch them. But they're hoping not to catch them." Another interviewee stated that, "so many field rangers go to their supervisors saying, I'm being threatened. Nothing gets done. There's no protection for them. That's when they become corrupt."

South African interviewees also noted that organised illegal wildlife trade has been allowed to continue for so long that the crime syndicates are now placing their youth into law enforcement jobs and positions that will be advantageous to the syndicate. As a result, one interviewee said, "if we do an operation here now, we don't even involve our local police station because I don't trust any of them." Multiple interviewees in different provinces described analysing seized phones of wildlife traffickers and finding contacts for prosecutors, police, and on a few occasions, even colleagues in wildlife enforcement. More than one expert noted that they have learned to work around corruption: "I hate to say it, I hate to accept it, but we work around that." Another said, "it is so sad that that is our normal. We have terrible courts in [location redacted] to the point that we would plan our takedown operations to intercept the vehicle at a court where we knew we had a chance. I mean, how crazy is that? That's how we have to work. It's at all levels."

Corruption in South Africa can take many other forms. An interviewee stated that they have "been on operations where a local officer said, “just make sure that guy's not in charge of the

cell while you're not looking because all of a sudden, everyone you arrested will be gone.'" Another said, "one of the provincial authorities who issued permits for rhino dehorning or relocation would leave the permits on their desk, and somebody would screenshot it. When they went to move the rhino, or shortly after the horns had been removed, they would be attacked, and the horns would be taken, or the rhino would be poached en route."

Counter-wildlife trafficking operations can also be discouraged or stopped altogether by corrupt officials. For example, one South African interviewee stated, “we had to fly down to do an operation in [Province]. And everything was spot on to do a transaction with a syndicate leader. And we took the rhino horn through the airport, obviously they scan it and show the necessary approval and permits and boom. They must have made a phone call to say there are people flying down with rhino horn. Operation fell flat in a day. That is corruption.” Similarly, wildlife enforcement staff have been told by colleagues that something suspicious was not worth looking into by people who were later discovered to be involved.

By contrast, interviews revealed that corruption in Hong Kong is little understood by the individuals working in wildlife enforcement. Most interviewees were confident that corruption was not a significant factor that currently facilitated illegal wildlife trade in Hong Kong. Interviewees noted that it was more of a known problem in the past, but that the creation of the Independent Commission Against Corruption in 1974 helped to stem the issue. Interviewees noted that it would be challenging to engage in corrupt activities, given

that public officials are frequently rotated from their roles every few years, and public officials receive adequate pay, and that Hong Kong's borders are porous enough to not need to rely on corruption. "There's just not enough enforcement, you don't need to bribe somebody. I think you just need to put stuff in your truck and drive over and nobody's looking." One interviewee was not as convinced, stating, "I am becoming more and more convinced that [corruption] is going on. Because I don't understand how the enforcement is so lax without there being some reason for it to be lax." Another interviewee shared the same sentiment: "logic would dictate that it is here and based on what is happening or what is not happening, it has to be here. The challenge is we have absolutely no evidence of it. For these prosecutions to not get further. For investigations to be mishandled, or sort of swept away, or for people to get released on bail and never seen again, somebody somewhere must be doing something, but we have no idea." Several interviewees noted confidently that corruption relating to illegal wildlife trade in Hong Kong has existed in more than one government department in recent years. One investigator recalled a case of a reptile trafficker who claimed to have access to corrupt customs officials. Another interviewee mentioned a lobster trafficker who brought a consignment from South Africa to the live seafood import area in the Hong Kong Airport, where a customs officer tried to keep a document that they did not require as part of their duties (so that they could fraudulently re-use it later). One interviewee accused more than one high-ranking government officials of corruption linked to illegal wildlife trade throughout the past decade. Several interviewees suggested that a few Hong Kong-based Honorary Consuls have played a role in facilitating illegal wildlife trade between their representative countries and Hong Kong. Another interviewee stated that, "without a

doubt there was corruption [in Hong Kong]… With China, you have pretty smart criminals. These guys have connections. If you're talking totoaba fish bladders, there's connections with the cartels, absolutely. And that's a Hong Kong connection."

The general conclusion from interviews is that, beyond a few individuals or individual cases, corruption in Hong Kong does not appear to be systemic. For example, interviewees noted that following the seizure of extremely valuable live wild animals, not only has the wildlife never been reintroduced to IWT markets, but they have seemingly been forgotten, and "no one is taking advantage of having all of these rare, really high-value species that are just sitting in a government holding centre." Therefore, the corrupt actors in Hong Kong may only engage in specific types of illegal wildlife trade, perhaps as it relates to certain organised crime networks.

Similar to Hong Kong, corruption was not thought to be a key driver of illegal wildlife trade in Canada by any interviewees. Interviewees generally felt that "our checks and balances are pretty good." Experts who have worked on illegal wildlife trade nationally for decades confirmed that, "we don't have heavy duty institutional corruption." Similarly, another added, "Major corruption? No, I'm not too worried. We haven't seen it." Interviewees noted frequently that Canadian wildlife law enforcers are generally extremely passionate about their jobs, and that corruption has not been a major inhibitor for information-sharing. As one interviewee stated, "I find that generally speaking, the people who are doing this kind of enforcement are very motivated, they identify with it, they identify with the environment, so

they have that incentive to work together with others." This sentiment was commonly repeated, such as "conservation officers don't break the laws they enforce because we're very passionate." Another interviewee echoed, "there's very few jobs in this world that people do out of passion. Really. You live in your employment and your employment lives in your life. And I think that's why you don't see that happen."

Several interviewees in three Canadian provinces mentioned that non-wildlife law enforcement officers have sometimes been involved in illegal wildlife trade. As outlined by one person, "we do tend to have conflict sometimes with [redacted law enforcement agency] in that sometimes the officers think they're above the law and kind of look down on our legislation a little bit." Another interviewee added, "I have seen police officers involved in wildlife trafficking. They weren't using their position to do that. They just didn't think it was a real crime." The types of wildlife crimes reported by interviewees as being committed by police in Canada included illegal hunting, fishing, and trafficking, including bear parts, moose, and exotic tortoises. In one notable case, officers "had to execute search warrants at the actual [police detachment] because [the officer] was selling gallbladders to couriers who were taking them back to China." In addition, a wildlife law enforcement official explained that there is substantial evidence to suggest that there is corruption in the system where people receive certification to be eligible to buy hunting licenses in their province.

Aligning with previous research and reporting, multiple Canadian interviewees expressed concerns about fisheries-related corruption with regards to industry-funded monitors on

fishing vessels: "We know it's a corrupt program. We know that it's not working. If you're a monitor on a fishing boat in the middle of the Atlantic, full of men, and they have fished more than they're supposed to. Are you going to take a strong position? You may be intimidated to just forget what you've seen. And some of [the monitors] probably make money on it." Other fisheries experts expressed similar concerns: "They're going to report what they're told to report because otherwise their life could be in jeopardy. I'm bringing in my quota of a ton and really catch 1.2 [tons]. So, 200 is just dropped in the water, marked with a buoy and then a speedboat comes in and takes it somewhere along the coastline." Similarly, another interviewee stated, "there's definitely some sense of corruption in terms of dockside monitors who monitor the amount of fish coming off of boats. The harvester has a quota, and a third-party person weighs what comes off the boat to verify the catch amount. Oftentimes, they are people from a small community. So, the guy measuring the fish is probably his cousin."

5.4.1.2 Violence

Violence relating to illegal wildlife trade is commonplace in South Africa, and interviewees thought that it was becoming more overt over time: Intimidation of investigators, witnesses and informers is now the norm. An expert noted that wildlife crime informers frequently receive threatening messages or find "a car standing outside their gates at three o'clock in the morning and they are nervous. Every single week." Wildlife crime investigators have been testifying in court and been threatened that they would be killed in front of the magistrate. Some investigators and prosecutors have 24/7 security. Interviewees said, "that is scary

because it wasn't like that before. Definitely a big change." Law enforcement officers for illegal abalone trade can run into similar challenges and many have received death threats. This also makes law enforcement more difficult in light of understaffing issues: "When we show up with two policemen, the next moment there are 13 divers standing around them with knives threatening them. How the hell are these two policemen going to arrest them?"

Reasons theorised by interviewees for the escalation of violence include: the legacies of apartheid policing (where law enforcement itself instigated and perpetuated violence by enforcing laws of racial segregation and inflicting human rights abuses), militarisation of anti-poaching, and crime convergence, in that the top wildlife traffickers were often previously involved in other violent crimes before getting involved in wildlife crime. Interviewees stated that there is even more violence linked to illegal wildlife trade than what appears in the news. One expert explained that, "we did have one incident of many, where five [nationality] citizens were killed in Cape Town by the triad, but that was due to other wrongdoings in the triad. The triad will take you out... The guy came in there around six in the evening. He landed at O.R [Tambo], went from there to Cape Town, the next morning he was back at OR in less than 12 hours. Five bodies later. Sorted." One interviewee thought that the level of violence associated with wildlife crime is due to crime convergence, whereby those involved in wildlife crime are also involved in other crimes like armed cash-in-transit heists and carjacking, "because to be involved in cash-in-transit, vehicle hijacking, you are used to living a dangerous life, and you don't think twice about pulling a trigger."

By contrast, in Hong Kong, interviewees suggested that violence is rare, mainly because of the consequences of getting caught, because the penalties for wildlife crime are too low to rationalize the use of violence, and because the use of violence would draw new policing attention to the issue of illegal wildlife trade. That said, verbal intimidation and threats do occur. One expert explained a case where "a guy was indirectly intimidating the law enforcement officer. Not a direct threat: 'I've seen you before last time you were by. And If I were you, I don't think you are paid that much, watch your back'... Some people said that guy has a triad background." A number of interviewees who advocated for the ban on ivory trade in Hong Kong said they received anonymous death threats. Furthermore, interviewees mentioned a case where agarwood harvesters came from mainland China into Hong Kong to poach. When the local villagers saw them, “they shouted at them and tried to stop them from harming the trees. These poachers, they have their knives and weapons, and they go down the mountains to threaten the villagers." One interviewed expert tried to get photos of people they suspected of being agarwood poachers, and the suspected poachers ended up chasing them in their vehicle. The interviewee said, "I thought, 'I'm in danger.' After this I went to the police and said, 'pay attention to this area,' and then within seven days, over seven or eight fairly big agarwood were chopped down there. It is very serious." Hong Kong interviewees also mentioned that with cross-border smuggling to China, the boat chases can turn aggressive, and the smugglers might ram policing vessels. Interviewees noted that, "I think that the greatest threat to enforcement authorities is dying in the speedboat chases or getting injured." The interviewees noted that sometimes the boats are modified with extra engines and steel-reinforced parts for ramming. In those cases, police said, "we will charge them for

endangering the lives of people at sea as an additional charge and not only for the smuggling offense." Beyond that, most interviewees in Hong Kong expressed that violence is uncommon and not severe.

In Canada, interviewees agreed that the use of violence by illegal wildlife traders is rare, and violence linked to illegal wildlife trade is specific to certain geographies, lucrative trades, and individuals. One expert said that, "it seems like people that are involved in wildlife crime are also involved in other criminality, but they almost don't expect to ever be caught. Even if they apply tradecraft to their other criminality, their guard is down significantly when it comes to wildlife stuff." Another interviewee noted that "this is such a low-risk crime that it just doesn't make sense to get your knickers in a bunch over a $300, $500, or few thousand dollars fine." Although actual violence against officers is not the norm in many parts of Canada, interviewees provided examples from all provinces whereby the potential for violence was serious. Wildlife enforcement officials stated that "we do see illegal guns quite often, handguns. We run upon lots of drugs, impaired people." In one province, "an officer's camp was burned down and officers had to carry firearms off duty as a precaution for their safety." An expert from another province also noted, "we have a pretty high-risk environment because everyone we approach is armed, whether that's with a knife or a gun. Officers have been shot at, and we've had a number of really close calls with assaults." A couple of interviewees thought that violence is more likely to occur "in areas heavily influenced by organised crime. There's a lot of reluctance to speak to us. You can tell there's interference and intimidation. We get use of force scenarios or situations where officers are engaged in

having to apply force to intervene physically." Several interviewees noted that law enforcement tasked with addressing fisheries challenges also come across violence, particularly regarding glass eel trafficking from the east coast. Interviewees explained that there has been a growing conflict preceding organised crime involvement that originally stems from Indigenous resource access and treaty rights. One interviewee noted that there has been an escalating, "rift between Indigenous and non-Indigenous. Indigenous boats have been set on fire. Fish warehouses have been set on fire. We have a lot of fighting. Fishery officers being threatened by guns. One guy was running after him with an axe. So, violence is always [potentially] present… Actually, it's growing. The criminality in the sector is more advanced. And driven by open transnational criminal organizations." Another Canadian interviewee reported receiving death threats from members of the fisheries industry.

Canadian interviewees suggested that violence may be more common between criminal offenders in Canada than directed towards investigators. As one interviewee stated, "with the outfitters and the migratory bird [poachers], those guys were ruthless with one another. We have accounts of them trying to run each other over with vehicles." Interviewees also noted that the threat of offender-on-offender violence prevents people from testifying, with one Canadian expert noting that the challenge is especially common with Indigenous gangs: "there might be three or four reserves around the area, and they're [all] just scared. They don't want to start a feud. They just don't want anybody hurt. So, they just say no, we don't want to testify, which is kind of a gut punch because we need them."

The main conclusion reached by this study on the issue of violence and IWT is that violence is mainly used by wildlife traffickers in locations where violence will not draw significant new attention from law enforcement, such as South African communities with high rates of gang-related homicides. However, the same network may not use violence so overtly on the Asian end of the supply chain. A Canadian expert also said that, "sometimes if you just have violent individuals, it's just self-destructive and at some point, they're going to get caught. At the higher levels, there is violence, but they're more secretive about it and take measures not to get caught. It won't be as brazen. A person might just go missing." There was consensus that "illegal wildlife trade has worked so well by drawing less heat rather than more heat to itself by maintaining the stealth-ness of it."

5.4.1.3 Money Laundering

In all three jurisdictions, interviewees reported that much of the illegal wildlife trade is cash-based, especially at the levels closest to the poaching event, as cash is both less sophisticated and less traceable by financial institutions. Experts who have arranged sting operations in South Africa and Canada noted that offenders almost always ask for cash, sometimes counting it in a machine. A South African abalone expert described a garage full of money, with 100-rand bills stacked from the floor to ceiling, stating that, "the amount of money in this trade is mind boggling". Similarly, abalone traffickers in South Africa have been caught driving the abalone to Johannesburg for export, and then returning with over ten million rand hidden in the vehicle.

Both South African and Canadian interviewees mentioned that the real estate and automotive sectors are commonly used for money laundering among wildlife traffickers. One expert described how the housing market in British Columbia has been artificially inflated from offshore money being laundered through properties and suggested that they are starting to see a link between these groups and wildlife. They further stated that “recently we've run deconfliction [exercises with other agencies] and had phone calls back from [agency redacted], where these players, whether it's a black bear paw or a kilo of cocaine, they're starting to have [real estate and automotive money laundering] connections." Similarly, in South Africa, it is common knowledge that rhino horn traffickers often have easily identifiable mansions in their communities. Others added, "I've had cases where we look into the financial status of someone, and you'll see he has four or five or six expensive vehicles. They buy fancy cars in cash. Car dealers don't ask."

At an international level however, interviewees reported that cash is generally less practical for moving large sums of money across borders without detection, and interviewees reported a variety of approaches used which seemed to depend on the degree of organizational sophistication and crime integration. For instance, according to interviewees, opportunistic wildlife traffickers who have not faced much scrutiny, such as reptile traffickers, will often use basic wire transfers or email money transfers, as well as e-wallets and mobile money transfer systems such as Western Union, MoneyGram, PayPal, WeChat, and Alipay. For ongoing large-scale operations, such as marine animal delicacies, import-export and logistics companies play a huge role. If funds need to be transferred across continents between people

who do not necessarily know each other that well, and they also have to move wildlife, traffickers may establish companies that are not necessarily specialised in wildlife, but move goods into and out of South Africa, Hong Kong, or Canada. Wildlife trafficking reportedly often goes through the typical routing of import-export, and the movement of goods and funds appears like legal trade flow.

Additionally, interviewees commented that traffickers can easily mask illegal wildlife products under the guise of legal wildlife trade businesses, and use associated trade-based money laundering tactics, such as misrepresenting the value, amount, source, quality, and species of traded goods. Seafood companies are a commonly reported high-risk business for laundering proceeds of illegal wildlife trade in all three jurisdictions. Pet shops are reportedly used to conceal illegal wildlife trade in all three jurisdictions, including both the trade in live animals and transactions relating to wildlife-based pet supplies and food. A Hong Kong expert also raised concerns about the fashion industry (e.g., leathers) using IWT products in the place of legal animal products.

Interviewees did report exceptions to these generalisations. Some wildlife traffickers continue to prefer moving their funds across international borders as bulk cash. For example, an American wildlife trafficker was caught with large sums of cash that was earned through illegal wildlife trade in Canada and held in a safety deposit box at a bank in the United States. Similarly, large amounts of cash for wildlife trafficking have been smuggled across the Mozambique border into South Africa, even over ten million rand at a time.

Though difficult to detect, informal feiqian-type value transfer systems are also being used in all three jurisdictions, where rather than a direct exchange of money for a product, money does not actually leave China and instead, goods are moved around internationally while money is only moved domestically indirectly via brokers. Casinos were identified by interviewees as a way to launder illegal wildlife trade proceeds in South Africa and Canada. One example was a large rhino horn trafficking syndicate operating in South Africa that typically sends the product abroad and is then compensated through the importation from China of material products, such as building materials, clothes, and shoes, or whatever is requested. The import-export company is owned and operated by the Chinese actors. These goods are then sold at various Chinese-owned shops in multiple towns in South Africa, and shop owners then pay the casino in cash for the value of their imported materials. Ultimately, the casino serves as the financial broker between illegal wildlife shipments and imported consumer goods from China.

In Canada, interviewees suggested that wildlife traffickers may also be taking advantage of business immigration visa programs to circumvent the limits on money transferred outside of mainland China. Prospective immigrants send an agent with large sums of their boss' money and claim to be an entrepreneur as an easy pathway to immigrate, move dirty funds, and establish a presence in Canada. These individuals also have their own accountants pre-arranged. As one interviewee explained, "but if that money has to be repatriated back to the original owners who are probably still in East Asia, then it can be used to say, buy a polar bear mount, or a hide, or a narwhal tusk." You can buy that in Canada for [redacted]. But the

moment that commodity is then physically brought over into the East Asian country, it's easily worth [much larger price redacted].

Interviewees identified Hong Kong as a global money laundering hotspot and hub for illegal wildlife trade, with strong ties to illegal wildlife trade in both South Africa and Canada. Interviewees mentioned that Hong Kong is used to move China-based transactions internationally using informal value transfer systems, as these can circumvent the currency controls in place for China. This is made even easier by the fact that Hong Kong strives for a regime which makes it easy to do business. As one interviewee stated, "come to Hong Kong, because it's easy to set up a business and there won't be a lot of red tape. That creates the easy opportunity for shell entities to be established, and the transactions move between shell entities purely for the purpose of layering transactions."

Another method is the use of a middleman to take a photo of the rhino horn and send it to their boss in Hong Kong. The boss would then transfer money to another person in a shop 20 kilometers away. That person would then transfer money to the middleman, which would then be given to the poacher. There is no direct attachment of the syndicate leaders. At the higher level, "people are not very fond of direct cash deals, because they know it will probably be an enforcement operation." Instead, rhino horn will be delivered and then an agent will bring payment two days later once the money is ready or leave it in a box somewhere.

In Hong Kong and South Africa, friends and family members open accounts to help move money. In other Asian countries where regulations are weaker, syndicates may open "zombie accounts" for dead people. Shell companies were most commonly reported in Hong Kong, where financial investigators visited listed office addresses of suspicious businesses and did not find anything there.

In South Africa, cash-intensive businesses are used as fronts for wildlife trafficking, including taxis, small taverns, salons, non-profit companies, cash loans businesses, stokvel, and transport companies. Proceeds of wildlife trafficking are also invested into construction and building materials, cattle, and vehicles.

Professional money launderers are reportedly used by more sophisticated networks. These are people that provide third-party services to ‘clean’ criminal proceeds for multiple organised crime networks, in exchange for a commission. Professional money launderers can be individuals or a group of associates who deliver these services; they may be accountants, financial or legal advisors, trust and company service providers, brokers, or bankers, all of whom develop and maintain infrastructure for laundering money and then sell the infrastructure. The use of professional money launderers was identified by interviewees in all three jurisdictions, including specifically for rhino horn trafficking in both South Africa and Canada. Interviewees explained that professional money launderers create ecosystems for registered shell companies in order to mimic trades and transactions between merchants and buyers. In South Africa, an expert noted an offender who, "sells companies to the traffickers,

they'll use it for one or two exchanges, and then it's gone. They have two or so exports first so it all looks legitimate." Some crime networks that have already established themselves with drug trafficking or sex trafficking already have these systems in place when they diversify into wildlife trafficking.

Importantly, top investigators in all three jurisdictions admitted they do not have a high level of detail yet to thoroughly understand how money is being transferred in illegal wildlife trade networks, particularly internationally, and this lack of understanding is a clear barrier to IWT control.

5.4.2 Marketing

Multiple interviewees in all three jurisdictions noted that many wildlife traffickers are also marketers. Not only do wildlife traffickers fill demand for illegal wildlife products, but they also *create* the demand by marketing their products. In Canada, a reptiles and amphibian trafficker posted an advertisement to a reptile classifieds website despite not having the animals in his possession. When questioned by law enforcers, he explained that he was assessing demand and would use that information to decide how many reptiles he should request to have poached from the wild. In West Africa, an investigator interviewed an arrested wildlife trafficker who admitted that they were trying to create demand for a new illegal wildlife product, leopard cake, made from extracting the gelatin out of boiled leopard bones, an entirely new product destined for Vietnamese pharmacies. Marketing of IWT products was also noted in Hong Kong with illegal turtle traders who post to Facebook and

WhatsApp to assess interest and gauge how much people would be willing to pay for a species of rare turtle; once they decide whether the profits are worth their while, they arrange for the turtle to be harvested from its natural habitat. As one West African expert explained, "the demand is not fixed, it's propagated… Ivory without distribution is nothing. Ivory without propagating demand is nothing. We also have [entirely new] markets being created by syndicates. They make it happen."

5.4.3 Other Organised Crime Tactics

While the majority of illegal wildlife trade is generally not highly organised, a number of syndicates operating in these three jurisdictions are fairly sophisticated. Investigators in South Africa and Canada described extensive lengths of time that it can take to get wildlife traffickers to trust their undercover operatives. One South African expert noted that, "there are some groups that are really difficult to get access to. They're not stupid. If someone they know has been arrested, they'll analyze what happened leading to the arrest… And then use counter measures to prevent it." Investigators in both South Africa and Canada described multiple cases where they started closely watching highly organised Asian organised wildlife traffickers only to see them immediately leaving the country once law enforcement began to fully understand how they were operating.

Organised illegal wildlife trade networks employ counterintelligence measures. A rhino trafficking expert in South Africa stated that, "in the main centers like Johannesburg, there are people that just work on intelligence. All they've done for years. They know exactly

which farms, which properties, which reserves house rhino. So, if you want to know, you pay 25,000 rand, and they give you the name of the farms, and their routine, how is it accessible." Similarly, interviewees described how law enforcement began using a particular investigative approach and abalone traffickers quickly became aware and figured out a workaround. An interviewee stated, "they have infiltrated every bit of information. The guys are going out tonight, the minute we get our boat and start launching, they know that. They have contacts at the harbor and the points of entry." Similarly, the use of counterintelligence was identified by interviewees in multiple locations in Canada, especially relating to illegal fisheries.

Organised illegal wildlife trade networks, particularly Chinese syndicates operating in South Africa and Hong Kong, compartmentalise their organizations in order to evade control. One interviewee mentioned a South African abalone trafficker who received 10 million rand from their overseas bosses simply for not mentioning the names of high-level syndicate actors. One South African interviewee stated,

> "I once spoke to a brilliant lawyer who does very high-profile cases. His company does work for the [nationality] syndicates. He was representing people who had an abalone drying facility. We sat outside of court and waited for our thing to come up. I asked him, 'how will I ever find out who the big people are above your client?' And he said to me, 'you will never find out who the big bosses are.' He said he doesn't even know. He says he's been working for those syndicates for 20 years, but he doesn't know. Someone phones him with a cell phone number that he doesn't recognize. And they tell him, 'you must go in there to represent those two people in

that court.' And he goes. The money just comes into his account. You will never trace them."

Another interviewee told a similar story about a junior defense lawyer in South Africa who was told to represent a wildlife syndicate member in court, and despite never meeting the person who hired him, received keys to a new Porsche vehicle as incentive to take the case.

5.4.4 "Whack-A-Mole"

It is increasingly recognised that arresting poachers does little to stop international wildlife trafficking as they can often be replaced quickly by the network, even within 24 hours, a process akin to the carnival game “whack-a-mole”. Anti-money laundering experts noted that similarly, banks can close accounts down, and traffickers will simply go to a different bank. Equally, when a "kingpin" is removed, the network will reorganize itself. One expert said that "there is a lot of fantasy in the wildlife law enforcement community about bringing down kingpins, and we should have learned from 70 years of counter-narcotics efforts that taking out the kingpins has limited effectiveness." If a social media account is suspended for advertising illegal wildlife, traffickers will quickly create another one. One enforcement interviewee added that they can close down a company being used for wildlife trafficking, but traffickers will "open up a new one and carry on elsewhere." None of these approaches alone will dismantle an international wildlife trafficking organisation with the ability to reorganize quickly, therefore sustained pressure through dedicated, collaborative, and comprehensive organised crime investigations are required.

5.4.5 Is Illegal Wildlife Trade Adequately Prioritised?

One of the key themes that reoccurred throughout the interviews was whether enforcement and control of illegal wildlife trade was adequately prioritised in the selected jurisdictions. In South Africa, 8 interviewees thought that illegal wildlife trade was adequately prioritised, while the other 27 did not. The strong consensus across South African interviewees was that while the legislative framework was strong, the implementation of that framework was a challenge. The lack of resources to implement the legislative framework was thought to contribute to wildlife trafficking syndicates operating with impunity: "the organised crime police can actually [provide details on] all their syndicates. But they can also show you that we were only able to [initiate investigations] on [a subset of all the syndicates]. So, in essence, the other ones are operating happily along."

Wildlife crime in South Africa has gained high-level political attention in recent years as the rhino poaching crisis has continued, yet interviewees suggest this has not translated into the resources needed for adequate control. Many interviewees recognised that though frustrating, resource limitations were understandable given the severe rates of other types of serious crimes in the country, often citing frequencies of gender-based violence. One expert said, "I cannot say there's no political will. I've always had top-cover support. But what do you do with your limited resources?" Experts conveyed that staffing was a major concern and that the number of vacant posts in key rhino trafficking hotspots is evidence that the issue is not adequately prioritised. A commonly raised concern was that certain species including

succulents, cycads, pangolins, reptiles, and even abalone do not get the attention they deserve with the bulk of resources consistently directed towards rhinos.

In Hong Kong, 6 interviewees thought that illegal wildlife trade was adequately prioritised, while 23 thought it was not, and 4 were unsure. Like South Africa, the legal framework was thought to be fairly strong, but enforcement was lacking. An expert explained that, "we've got great laws in place, but do they actually do what they're supposed to do? Are they enforced? No. 100%." Hong Kong's civil society pushed for legislative changes, but multiple interviewees expressed that when the changes were eventually made, it may have only been made to give the appearance of trying to address the issue. Interviewees expressed that they would like to see the powers of the Organized and Serious Crimes Ordinance (Cap. 455) used to investigate illegal wildlife trade because, "if you don't use it, you don't find out that it's organised crime. It just looks like turtles in a box. No further investigations."

Of the three jurisdictions, Canada had the lowest proportion of interviewees (just 2 out of 31 interviewees) who felt that the issue was adequately prioritised. One interviewee said that, "nobody's really crying for Canada because everybody figures that Canada has the situation under control. With what's happening with the eels on the East Coast [i.e., escalating eel trafficking with organised crime involvement], it shows completely that we don't have anything under control, because that is playing out much like the situation happened in Europe with eels or with rhino horns in Africa. All of a sudden, people realised, 'hey, we can

make a lot of money out of this,' and people started doing it without necessarily being knowledgeable about the area before organised crime comes in and organizes the markets."

One way of gauging the level of prioritisation ascribed to illegal wildlife control is through an understanding of agency staffing levels. Some Canadian interviewees did not feel comfortable sharing how many members are working on wildlife enforcement in their jurisdictions, while one provincial authority noted that their staffing levels were below what they were in 1990. An individual from another province said, "major wildlife trafficking investigations are files that take years to dig into. I need a dedicated analyst to do all my intel work. I need general investigators that can start working on the different judicial authorizations and processes - production orders, warrants. I just don't have those supports. And the feeling I get from my government is that we're not a necessity. It's the same with the other Canadian wildlife agencies – they're underfunded and understaffed. We can't meet our mandates on commercial wildlife at all." Another said, "we're scratching the surface sometimes. And we have known organised groups out there on the landscape."

Another way to gauge the prioritization of illegal wildlife control is by considering leadership. One of the clearest themes that consistently emerged from interviewees commenting about the Canadian federal context is the issue of poor leadership at the highest levels of governance. Interviewees echoed that, "the biggest downfall is the lack of leadership at the top with law enforcement experience. They don't know how to use the legislation appropriately. So, when you do use it, they get very, very nervous. I would say

that's a bigger problem than the legislation itself." Many other interviewees consistently voiced similar concerns about this, with one stating "that the incompetence slowly works its way down." Others reiterated that, "we have politicians, people that have never done the job and don't have a broad base of knowledge and have no knowledge about enforcement… They either don't make decisions, or they make poorly informed decisions that keep pushing us backwards… That is a huge systemic barrier." Interviewees stated repeatedly that these leaders did not value the opinions of people who do have experience and expertise. Interviewees also mentioned that many key Canadian wildlife enforcement agencies have removed their undercover programs dues to risk aversion in the federal government. However, interviewees thought that being able to run undercover operations is essential for any law enforcement agency that is serious about tackling organised crime.

Interviewees in all three jurisdictions made additional observations related to the lack of prioritisation placed on wildlife crime investigation and control. In both Hong Kong and South Africa, interviewees noted that people often lack the passion for countering illegal wildlife trade and are simply put in those positions. A Hong Kong interviewee stated, "you need people in the system that their heart is in the job, not just because it was a good lifelong contract with the government and dental care." Interviewees in all jurisdictions expressed that without dedicated resources to follow through on complex investigations, it may appear that organised illegal wildlife trade is not a major issue, simply because we are not looking for it and understanding it. One undercover operator who is close to retiring stated, "I had infiltrated the trade. Now that I'm out, it's dead. There's nothing happening." Finally,

interviewees in both South Africa and Canada noted that government responses were too slow, underestimated how rapidly wildlife trafficking can grow, and allowed situations to escalate. Canadian experts had briefed leaders that organised eel trafficking was headed their way several years before it began to intensify, but action was delayed. Several Canadian interviewees said that senior public servants have "shut down" wildlife enforcement experts for presenting risks from an intelligence standpoint because they were not asked to do so.

5.4.6 Silos and Crime Convergence

Interviewees in multiple jurisdictions described cases where investigators in highly compartmentalised institutions spent months running separate investigations on the same individuals, which is indicative of a ‘siloed approach’ to wildlife law enforcement. This siloed approach is a challenge, particularly in geographically large countries where the networks have members across multiple provinces. A South African expert described a case where the offender they arrested was completely unknown to them but was working closely with a key target: "So [he's] obviously running groups elsewhere. We don't even have an idea who those groups are."

Since Canada is such a vast country, wildlife law enforcement is typically decentralised by regions within agencies. Canadians said they struggle to, "actually handle big issues of collusions... and the main reason is they're afraid. The Canadian Government is not exactly the place where people take risks. And this one is full of risks and not a lot of reward." Another interviewee from a different agency said, "everybody works in silos. And that's kind

of typical. It's human nature. But everybody works on their priorities, which means there isn't nearly enough cross pollination. Everybody recognizes it as a problem, but nobody quite knows what to do about it." Many interviewees felt that in-person networking, communication, and information sharing was essential to overcome silos.

A national intelligence expert in Canada offered a scenario,

> "if you have spent the last 10 years operating in Vancouver or Toronto as an investigator, you have seen some very serious things and that builds your experience and understanding. And those experiences may not exist in the same quantity or quality in provinces that don't have scope for those issues. If I operate any business in Toronto, and I have clients in Alberta, freight comes into play, then you have distribution centers... So as different things move through supply chains, including distribution points, there's likely complete unawareness in various parts of Canada that their areas of responsibility have these actors present. It's an evolving conversation in most levels of security in Canada, and policing has started to incorporate language and discussions on these topics."

Furthermore, Canadian experiences suggest that firmly established silos can lead to cases falling through the cracks. Multiple interviewees felt, "we're all looking at the same people and no one's talking. Operationally they want to, but when you get to the higher executive levels of policing, it seems to die." One interviewee described additional legal and capacity challenges with overcoming silos:

> "[silos complicate] disclosure and getting something through court within the required timelines of 18 or 24 months, depending on summary conviction or indictable offense. When you start layering all these other agencies, the more complicated you make things, the more risk you have in not succeeding. And the resourcing and budgets that wildlife agencies are faced with: You've got a lot of frontline officers doing very basic frontline inspections. But you need those complex investigations that have specialised techniques and targeted project-based work. A wildlife agency is probably lucky if they have five staff that do that for the whole province. And if you have more than one intelligence analyst, you're probably better off than 90% of the country."

A global expert stated that: "We have to get multi-agency task forces. That's more of a cultural mindset that has to change within law enforcement. It has to go all the way up to the tops of those agencies, so that higher ups in those departments are saying 'yeah we're going to be committed to an organised crime approach to wildlife trafficking and treat it that way'... My argument is 'hey, you guys need to do this because you've been doing mafia cases, drug cases, and counterterrorism cases for a long time. Just do it for wildlife as well and it'll pay off dividends because it'll link up with all these other things you're interested in because of convergence.'"

5.4.7 Police Support

The lack of police support for wildlife trafficking investigations was a clear theme in Hong Kong. A law enforcement officer stated, “interdepartmental collaboration is usually quite hard to achieve because other departments don't prioritize wildlife crimes." Another interviewee described reporting an international wildlife trafficking case to the police, and it was "immediately redirected to AFCD [Agriculture, Fisheries and Conservation Department] because it had an animal connection. They just assumed it can't be organised crime, and they didn't bother handling it." A Hong Kong Police Force anti-smuggling official stated, "I think the situation is not that bad. Cross-border smuggling, of course, there's still some cases. But for wildlife, I don't think it's there or so serious… That situation is just not that prevalent. Right now, in the Hong Kong situation, it's still under control." When asked about wildlife trafficking network structures, a wildlife law enforcement official responded, "I have no idea. Because we're just a transit hub. We only see a small piece of the picture and we don't have much investigative power. What we can gather is only from the person that we arrest. And they usually don't say anything. So that usually stops the investigation. We don't have software for breaking into phones for evidence. That's what the police are capable of."

Similarly, in Canada, a common sentiment was that it was challenging to get non-wildlife enforcement agencies involved in wildlife trafficking investigations at the federal level: "They are reluctant to touch that. For them it just doesn't exist. Like we're pushing something that we shouldn't." However, at a provincial level, a number of interviewees were pleased with their collaboration and intelligence sharing systems. This was evidently specific to

certain provinces that have developed efficient and collaborative working relationships with their relevant policing agencies, noting that they cross-train, go on joint patrols, and have never had partner agencies turn down a request for help. One interviewee added, "and intel's coming here shortly, where we're all using the same system and it's all going to be shared. [Details redacted]. Enforcement intel sharing has tripled in a good way in the last little while."

5.4.8 Lack of Resources

Lack of financial and other resources was mentioned as a critical barrier to wildlife trafficking control by both South African and Canadian interviewees. In South Africa, multiple interviewees raised the issue of severe backlogs on DNA and ballistics systems preventing cases of international significance from advancing. Accessing wildlife traffickers' communications remains a challenge. For example, lizards and succulent traffickers communicate by WhatsApp and email to arrange deals, and law enforcement struggled to download these messages because they did not have the technologies to open locked phones. The lack of resources and equipment can also affect the safety of wildlife enforcement personnel. Interviewees mentioned that many Canadian officers in multiple regions did not have access to a two-way radio system for communication while on the job until recent years. One interviewee said, "I used to work policing in [redacted]. Not every person I dealt with had a gun or a knife and yet, your backup was 30 seconds away." Technologies also emerged as an issue, especially for Canadian law enforcement where many interviewees criticised the IT quality of their databases and felt their cyber intelligence capacity was lacking.

Insufficient salaries were thought to be a concern for demoralizing frontline officers in both South Africa and Canada, although this appeared to be agency specific.

5.4.9 Accessing and Understanding Financial Information

Multiple interviewees mentioned limited financial crime literacy among people tasked with wildlife law enforcement as being a huge barrier to being able to pursue “follow the money” approaches (i.e., using financial investigations to investigate and prosecute wildlife traffickers). South African anti-money laundering experts felt that law enforcers lacked a thorough understanding of the laws at their disposal to criminalize money laundering. Another challenge mentioned is getting financial institutions on board with counter wildlife-trafficking efforts, given that the amounts of money that are moving in individual transactions of illegal wildlife trade may be significantly less compared to drug trafficking. One Canadian interviewee said that: "the challenge of going after the money is both structural, in the sense that financial investigators have other fish to fry, and the people who are looking at it from the environmental context simply don't have that skill set and training." For a large cross-continental wildlife trafficking operation, one investigator noted that, "we never did get a real sense of how that money was moving. Because the way they've set up most wildlife agencies, they don't give them the authority to investigate the money. And I don't think it's because the banks don't want to cooperate. I don't think the banks know." Hong Kong wildlife law enforcers made similar comments. In addition, simply obtaining financial transfer information is a barrier as many money transfer companies store their data

in other countries where it can be challenging and time-consuming to get the judicial authorizations to access the data.

5.4.10 Information Sharing and Collaboration

Institutional ‘egos’, jealousy, and lack of trust were mentioned as major barriers to information sharing and collaborative counter-wildlife trafficking efforts. In some cases, ego appeared to be culturally specific to certain teams and organisations, as not all interviewees reported these as issues. For example, financial intelligence units that collaborate internationally described their working environment as a “welcoming space” for learning and supporting each other. Conversely, South African interviewees consistently reported major distrust of outside organizations. According to one interviewee, "in the early stages, there were many big workshops, summits, get-togethers, and then they realised that [these events were] actually quite a leaky sieve, that not everybody was there for the right reasons." South African interviewees said that they work in a close team and don't share operations outside of that team because, "it's been proven that sometimes [outsiders] are playing the hand of the criminal and your operation falls flat immediately." Experts noted that the challenges with information sharing are not specific to wildlife enforcement. One interviewee stated that, "there is professional jealousy among the state agencies. The reality is that there is ego, and 'who will get the medal.' It's often unprofessional, though, it's human." Anti-poaching units and NGOs have similar challenges. One interviewee mentioned that NGOs, "don't want to share their information, because they feel that that will affect their funding. And sometimes by not sharing it, the crime goes unnoticed and punished."

A lack of understanding and will to work on illegal wildlife trade cases, sometimes related to politics and fear, can also be barriers to international collaboration. A South African interviewee described a case where they needed assistance from a Southeast Asian country, but the other country refused. Interviewees felt that countries will often only assist another country if it's beneficial to their country. Law enforcement in all three locations said that controlled deliveries are rare and severely underutilised, and that this issue is indeed unique to wildlife crime and not an issue in drug enforcement.

In Hong Kong, one critical barrier to information sharing related to the National Security Law which criminalises foreign collusion. One interviewee said, "so if a law enforcement agency works with a foreign agency, if the wrong person looks at that - oh they're colluding. So, they have to be really, really careful, which is crazy, because that's a huge impediment to open exchange." Staff rotation in and out of positions is also a challenge to building trusting relationships: "A lot of [intelligence sharing] is personality. The people, they're not faceless… In Hong Kong, they rotate people all the time which means we're constantly having to re-start with new people." A lack of will to help out with wildlife crime is another factor contributing to a reluctance to collaborate within Hong Kong. A wildlife law enforcer said, "we will call the police to come help us from time to time. It depends on the region, the police work with us, but sometimes they just ignore us."

Additional barriers to sharing information were reported as being related to bureaucratic, legal, and institutional cultural reasons. In Canada for example, wildlife law enforcement

information-sharing challenges primarily related to the Privacy Act and wildlife agencies not having investigative body status. Culturally, an expert from one Canadian wildlife law enforcement agency said, "the default setting is not to share information, and it seems part of the culture here. We need a chronic culture shift." Similarly, an expert from another Canadian wildlife law enforcement organization explained their organizational culture as, "we have silos that exist within our own organization, even within the intelligence branch… Some people think that knowledge is power and if they share that it diminishes their position… it's a lack of leadership saying 'no, this needs to be coordinated. Everybody needs to be on the same page and have access to this information. These are national priorities.'" An interviewee from another agency spoke about the role ego played in their institutional culture, "ego, that's my daily issue. It's more about control. And having their own interests at heart." Another Canadian intelligence expert stated that, "I had some of my guys angry because an operation was successful but there was no word on the work that we had produced on it. And we had done quite a lot. But, it's our intention to be in the background. If you don't accept that then do something else."

The global experts agreed that, "it's like that for every agency." These barriers to information sharing are thought to be preventing the law enforcement community from understanding the larger networks and converging crimes. A South African investigator noted that, "certainly, you've got to be very choosy about who you share what information with. But there's a lot of information that we believe the guys on the ground need to be aware of, for simple reasons that if they're aware of the general concept we're looking into and what's going on, they can

pick up on little indicating factors that they didn't realize was actually intelligence and feed it through to us. If they don't have that background information, they don't know that that's relevant. So, it's created big gaps. Everybody has little pieces of the puzzle, but they don't have the full picture."

Some interviewees felt that formal mechanisms were required to mandate collaboration, with a variety of possibilities suggested. One Canadian expert thought that, "you need a formal mechanism that is reviewed with Assistant Deputy Ministers and meets at least once a year. I don't see any working groups driven by the center, the Privy Council Office, and that to me is an indication that this is not a subject that is seriously considered by the government." Other interviewees felt that being able to codify how information can be exchanged between the major federal and provincial agencies would be helpful.

5.4.11 Raising the Legal Profile of Wildlife Crime

Continuing efforts to sensitize the judiciary and prosecutors about the extent of the issue and the severity of the consequences is an important step forward. A South African law enforcement official said that they were "screamed at by a magistrate. She was like 'seeds? You are coming in here with seeds?' But it's not about seeds, it's about transnational crime." Another interviewee shared the sentiment, "the court is dealing with children that are being raped, abused, theft, drugs, organised crime. And I come to court with a docket about lizards. Can you imagine the reaction that I get?" A few Canadians made similar comments (although this appears to be location-specific). Another interviewee added that, "it just doesn't seem

like Crown really has an appetite or takes our charges too seriously. Like, yours is the last on the docket if we can get to it. It creates a bit of a morale issue."

In South Africa, the overwhelming consensus was that the penalties are significant enough for illegal wildlife trade, but that the rate of convictions is so low, that it is not an effective deterrent. A prosecutor stated, "we win more than 85-90% of our cases. But then for every ten rhinos killed, probably one case gets to court." Another interviewee said that this is not the court's fault, and that investigating officers may make mistakes that later turn into technicalities that are used by defense attorneys to get the cases thrown out. In Hong Kong, however, no interviewees felt that the penalties for illegal wildlife trade were enough to deter the crime. Multiple interviewees noted that judges are not very "stringent" on this kind of crime, and that prosecutions are rare relative to the extent of illegal wildlife trade. Interviewees also noted that even when the punishment is severe, it is only on the mules and not the organiser. Furthermore, several interviewees noted large inconsistencies based on individual judges. In Canada, 56% of interviewees thought the penalties were too little, while 13% responded that it depends on the context, and 31% thought that the penalties were sufficient. Interviewees described numerous cases where an offender trafficked wildlife between the United States and Canada, and the penalty in the United States was significantly higher than the Canadian one for the same trafficking operation. One interviewee stated that "we see very discouraging penalties from the courts. And it seems like when you look at what happens in the US and how they're law enforcement is structured, and the approach they take, and the importance they place on things, and the actual penalties that they're

getting, in Canada it's embarrassing." Another added, "if you are on the commercial spectrum, it's really just the cost of doing business." A financial crime expert noted that they have seen people charged for ten thousand dollars, but then, "we see them come up again in our suspicious transaction reports. We're clearly not having a deterrent effect if people are still doing this activity. Maybe it should be stricter."

One interviewee said that it's,

> "an unfortunate reality, but our criminal justice system is completely ineffective. We can spend CA$100,000 investigating someone and come up with a completely overwhelming amount of evidence and they'll get a CA$5,000 fine. For example, [story redacted]. These people all said and done, got a CA$7-10,000 fine. For all the illegal wildlife that they killed - had they just bought licenses - it probably would have cost them CA$15,000 to actually legitimately pay for it. So, it was actually cheaper for them to go and commit crime, than it was to do it lawfully."

Canadians also felt it was important to continue to improve the legislation for seizing and forfeiting assets and poaching equipment to the crown, including hunting rifles, cars, fishing nets, boats, quad bikes, etc.

In South Africa and Canada, many noted that while there is room for improvement, judges have generally become more attuned to the issue of illegal wildlife trade. A South African interviewee noted that "bail condition amounts have improved, the harshness of sentences,

and the more standardised sentences at various courts." In Canada, an interviewee stated that "we're starting to get jail time on some of our habitual offenders. News releases are definitely deterring people and putting that fear in them that we will seize your house and your boat and your truck and everything." One Canadian expert stated that, "more and more cases are pretty significant penalties. The judiciary is taking wildlife crime pretty seriously now."

5.4.12 Policing Historically Marginalised Communities

In South Africa and Canada, experts noted that many wildlife traffickers come from historically marginalised communities where policing has been used as a tool for violence and oppression, and this complicates wildlife trafficking control. There were uncertainties in both countries among law enforcement of how best to address this issue. An expert in South Africa stated that, "we spend a lot of money on law enforcement. I think that if communities were more empowered, they wouldn't need to result in poaching. We spend too much money and resources on policing them when they need other resources. Maybe they need toilets. Maybe they need jobs. I think that if we could solve our social ills, it would have a much more positive influence on trade." An interviewee similarly said that, "race has got a lot to do with the problem and people don't see that, and they're embarrassed to speak about it." Several interviewees felt that large organizations do not have a true desire to do community work and that the community work that is being done "is pointless." Interviewees felt that socioeconomic programs must be well designed. Partnering with traditional leaders of communities was noted as a powerful and important step. Interviewees outlined that law enforcement could focus on generating structural economic incentives for communities to not

participate in crime and to support law enforcement, and that doing so will make wildlife law enforcement more "politically sustainable."

5.4.13 Solutions to Organised Wildlife Trafficking

The 37 most frequently recommended solutions are listed in Table 5.1. Implementing public awareness strategies to *prevent* wildlife trafficking was identified the highest number of times overall. However, this was not identified as a major issue in South Africa, where the public may actually experience what one interviewee called, "rhino fatigue." Instead, in South Africa, the priority next step is to ensure better integrity management and accountability for corruption. If anti-corruption interventions are not more widely implemented, as one interviewee stated, "corruption is going to kill the rhino." In Hong Kong, in addition to developing communication strategies for increased public awareness, interviewees thought that it was necessary to strengthen penalties to be proportional to the harm caused so that the penalties act as a real deterrent. In Canada, the solutions that were identified the highest number of times include: increasing staffing of wildlife law enforcement agencies; allocating additional resources, including funding and access to investigative technologies and equipment; and prioritising illegal wildlife trade at the highest level and asserting strong leadership on the issue, both nationally and internationally. Interviewees' suggested solutions largely focused on instrumental perspectives on wildlife crime offending and deterrence (see Section 1.1). However, the suggested solutions to engage Indigenous Peoples and Local Communities in counter trafficking interventions;

counter corruption; teach youth about integrity, ethics, and valuing biodiversity; and generally raising awareness of the issue are all key steps towards normative compliance.

Table 5.1. Suggestions for how to improve responses to countering organised illegal wildlife from wildlife enforcement personnel and other experts (n= the number of interviewees who suggested it in each location)

Priority Next Steps	South Africa	Hong Kong	Canada	Global
Develop and implement communication strategies to promote public awareness, including publicising successful convictions as a deterrent	3	10	7	1
Increase staffing of wildlife law enforcement agencies ("an army of investigators")	4	4	12	1
Prioritise illegal wildlife trade at the highest level and assert strong leadership	3	3	10	3
Ensure better integrity management and accountability for corruption	13	1	1	3
Strengthen penalties to be proportional to the harm caused	3	10	3	2
Allocate additional resources, including increased funding and improved access to investigative technologies and equipment	4	1	11	1
Mandate collaboration among relevant law enforcement entities	4	3	8	2
Sensitise the judiciary and prosecutors about the extent of the issue and the severity of the consequences	5	4	6	1
Promote seizure and forfeiture of assets to the fullest extent possible	2	2	4	7
Follow the money (analyse financial transfers to understand key syndicate players, especially the international middle layer)	2	2	3	7
Engage Indigenous Peoples and Local Communities in counter trafficking interventions, and promote sustainability initiatives and alternative livelihoods	6	0	6	2
Enhance training and professionalism of new recruits in wildlife law enforcement agencies	2	3	8	0
Foster better cooperation between national and international law enforcement operations to conduct joint investigations and controlled deliveries	3	5	4	1
Enhance law enforcement community awareness of environmental crimes to overcome apathy	5	7	1	0

Facilitate networking, in-person events, and building personal relationships through formal and informal opportunities to collaborate, share knowledge, and exchange information	5	1	5	1
Promote greater collaboration between law enforcement and civil society, including non-governmental organisations, think tanks, and universities	1	4	5	1
Adopt a proactive, intelligence-led approach instead of a reactive one	2	2	5	2
Apply the same investigative techniques and rigor used in other organised crimes when conducting wildlife crime investigations	1	2	4	3
Set up specialised units in the appropriate agencies to tackle large wildlife trafficking investigations	2	4	3	1
Enhance traceability systems through the supply chain, especially of live animal imports	0	5	3	0
Use wildlife crime as the "soft underbelly" of organised crime to infiltrate a diversified network	1	0	1	6
Use tax fraud, racketeering, and money laundering charges to counter wildlife trafficking (i.e., the "Al Capone approach")	2	2	3	1
Promote evidence-informed decision-making for allocating funds and resources	2	0	3	2
Teach youth about ethics/integrity and valuing biodiversity as part of school curricula	5	2	0	0
Conduct research to comprehensively understand the entire supply chain, including demand dynamics and devising effective strategies to combat demand	1	1	5	0
Establish joint task forces with well-defined visions, strategic plans, and objectives	1	0	5	1
Enhance financial crime literacy for wildlife law enforcers	1	0	5	1
Increase salaries of frontline officers, including possibly adjusting to population served	2	0	2	2
Implement more demand reduction programs in consumer communities, including incentivising alternatives to illegal wildlife products	1	2	2	1
Create improved and more centralised databases for wildlife crime intelligence	0	0	5	1
Recruit individuals who have established law enforcement and intelligence backgrounds in wildlife enforcement (not just biologists)	1	0	3	1
Eliminate culture of competition among non-governmental organisations with similar mandates	0	1	0	3

Using illegal wildlife seizures as the start of an investigation, not the end	0	2	0	2
Create dedicated "green" courts for handling environmental crime cases	4	0	0	0
Increase dedicated efforts to monitor and regulate illegal wildlife trade online	0	1	2	1
Implement more accurate campaigning from NGOs that are reflective of current high priority wildlife crime issues	0	0	2	2
Reward rangers that disrupt illegal wildlife trade by 'going the extra mile'	3	0	0	0

Additional interventions that were identified fewer times included: engaging private sector companies, including transport companies, social media companies, and financial institutions; declaring all wildlife imports whether CITES-listed or not; expanding DNA profiling databases; enhancing traceability of exotic pet trade; following the guns to better understand illegal wildlife trade networks; undertaking a global threat assessment to identify vulnerabilities; assigning dedicated ports of entry for wildlife; creating more specific Harmonized System codes; developing strict protocols on exactly how to proceed once wildlife has been seized, especially live animals; offering monetary rewards to communities for providing valuable information that leads to arrest and prosecution (because wildlife traffickers do the same thing); establishing a new international wildlife compact wherein if someone is caught poaching in one jurisdiction, they would be thereafter suspended in other jurisdictions as well (including across Canada and the United States); focusing more on statistics to have measurable indicators for success or failure of enforcement measures; consider plans for decriminalising wildlife trade (South Africa; n=2); and implement more bans on commercial wildlife trade (Hong Kong; n=2).

5.5 Discussion

The research confirmed that wildlife traffickers routinely use organised crime tactics including corruption, violence, money laundering, and counterintelligence as tools of the trade. Indeed, violence is reported to be increasingly tied to illegal wildlife trade in South Africa and is also escalating in various regions in Canada. However, law enforcement agencies commonly reported a lack of resources and capacity to tackle illegal wildlife trade using an organised crime approach. The most popular recommendations on how to combat these organised crime approaches (see Table 5.1) were to: ensure better integrity management and accountability for corruption (e.g., clear ethical codes of conduct, training, audits and compliance programs, risk management, enforcement of violations); develop and implement effective communication strategies to promote public awareness (including publicising successful convictions as a deterrent); allocate additional resources, including increased funding and improved access to investigative technologies and equipment, and; prioritise the issue at the highest levels while asserting strong leadership.

Scholars have argued that there are major gaps in how corruption is conceptualised in the context of organised crime, particularly in the Global South (Kupatadze, 2023), and the South Africa study has demonstrated that there is not a clear dichotomy between criminal actors and state actors. Like other researchers (Kupatadze, 2023) we found that state representatives, including law enforcement personnel, often play a direct and active role in supervising and organizing illegal wildlife trade. In South Africa and similar contexts, addressing systemic corruption must be a top priority in efforts to address illegal wildlife

trade, otherwise, increased staffing could theoretically be counter-productive in the current climate; boosting law enforcement presence could also simply increase the presence of state-affiliated actors in criminal activities (Kupatadze, 2023). In addition, increased staffing may not reduce crime rates if offenders do not perceive an associated increased arrest and conviction risk (Vose et al., 2020), which is the case in contexts with widespread corruption.

Anti-corruption reforms are promising approaches, as these have been successful in other contexts with deeply embedded corruption (Quah, 2018). Addressing corruption does not necessarily require interventions that are punitive in nature (Feldman, 2017) since these can also involve improving conditions of service, and ensuring frontline officers feel safe in their jobs and their communities. Relevant policy measures can also include provision of adequate pay, merit-based recruitment, removal of benefits such as pensions from people who engage in corrupt behaviour, strengthening of civil society, minimising societal inequities, and increased transparency of administrative decisions and selection of civil servants (McCusker, 2006; Tacconi and Williams, 2020).

Developing and implementing a human rights approach to counter illegal wildlife trade is now recognised as a necessity (Osorio and Bernaz, 2024), and the law enforcement perspectives included in the present study agree. This research strongly supports what other researchers have found regarding community-level interventions; supporting communities, and engaging them in wildlife law enforcement efforts, is essential (Anagnostou et al., 2020; Roe and Booker, 2019), even from an organised crime perspective. Community work must

be done in a meaningful way so that each side views each other as partners that can support each other. Diligently and incrementally addressing the systemic drivers of wildlife crime and empowering historically marginalised communities will improve the resilience of both law enforcement and communities and will reduce the ability of organised crime groups to infiltrate these groups (Anagnostou et al., 2021; Hübschle and Shearing, 2018). Supporting communities and frontline wildlife law enforcers will in turn reduce the crime and corruption that stems from coercion and desperation (Anagnostou et al., 2022), and specialised enforcement units can then focus their energy on the well-established and more serious offenders.

In addition, my findings that wildlife traffickers are creating new demand for wildlife products, has important implications for demand reduction efforts. Agencies trying to eradicate illegal wildlife trade need to simultaneously combat the traditional use of wildlife while also monitoring the marketing tactics of entrepreneurs who are continuously creating new demand for endangered species around the world. Curbing demand for illegal wildlife may therefore require an adaptive, ongoing, sustained effort in targeted consumer communities, while law enforcers aim to dismantle organised networks.

The foundation to many of the solutions that emerged from this research is prioritization of illegal wildlife trade. All or most of the challenges to countering wildlife trafficking can be addressed through capacity building, expanding resources, and ongoing training. In particular, overcoming the siloed approach to countering wildlife trafficking worldwide is

one of the most monumental challenges. Suggested solutions for overcoming silos in intelligence sharing included joint taskforces, intelligence hubs, working groups, and fusion centers. Identifying the desired end-state for an information sharing arrangement and the type of connectivity required will illuminate which of these solutions will be most effective (Brown, 2018). All of these suggested approaches require dedicated funding and resources, and therefore, in all jurisdictions, there must be strong leadership and political will to bridge silos and promote interdepartmental coordination. Individuals at the policy and ministerial level must decide that illegal wildlife trade is an important crime and demonstrate a willingness to invest in addressing it.

My research found that while many voices in the illegal wildlife trade space advocate for increased penalties, many experts also suggest that what is far more important in creating deterrence is not the size of penalty, but the likelihood that offenders will receive the penalty. Interviewees collectively felt that there is an optimal balance between a few months' imprisonment and/or a small fine, and incarcerating poachers for several decades. Similarly, increasing the likelihood of detecting corruption may be a more productive approach than increasing penalties (Feldman, 2017). Deterrence is a function both of punishment and crucially, of likelihood of prosecution. Interviewees noted that most wildlife traffickers rarely get caught, and are even more rarely convicted, suggesting that wildlife trafficking rates will continue to rise.

It was clear from the variety of cases reviewed in interviews that there is no single *modi operandi* for moving money and laundering proceeds from high-value wildlife trafficking, therefore, a comprehensive organised crime approach is needed. Further engagement with financial investigation units and financial institutions, in order to identify money laundering, recover and confiscate assets, and understand the size and scope of the network (TRAFFIC, 2023) will be beneficial to wildlife trafficking disruption and prevention. Financial investigations also provide additional evidence to support the prosecution of wildlife traffickers, and crime convergence (TRAFFIC, 2023). However, interviewees identified valid barriers to implementing financial investigations, including legal and structural barriers, and a lack of capacity, collaboration, and resources. According to the Basel AML Index, in 2023, South Africa scored a money laundering risk of 5.85, Hong Kong scored 4.93, and Canada scored 4.28 (where 0 = low risk and 10 = high risk) (Basel Institute, 2023). Therefore, beyond illegal wildlife trade, all of three jurisdictions can improve efforts for tracing, seizing, and confiscating illicit assets and cross-border cooperation in this regard. Understanding how to overcome these barriers will be important going forward as 'follow the money' approaches gain popularity in counter-wildlife trafficking efforts.

5.6 Conclusions

International illegal wildlife trade is a serious and complex organised crime. Illegal wildlife trade commonly relies on a variety of money laundering techniques in South Africa, Hong Kong, and Canada. Violence appears to be used as a tool for international wildlife traffickers

in locations where violence is generally more common. In locations where violence is rarely seen, it may bring unwanted attention from law enforcement that is otherwise not prioritising or looking into illegal wildlife trade. Corrupt public officials facilitating illegal wildlife trade is widespread and can be seen at any step of the way in South Africa. In Hong Kong, corruption is believed to be an issue, although few interviewees had direct evidence of its presence. In Canada, participants from across the country noted examples that were few and far between. Participants also thought that wildlife law enforcers were deeply passionate about their roles and that it would be extremely unlikely for them to ever facilitate illegal wildlife exploitation. Experts in South Africa, Hong Kong, and Canada felt that the issue was inadequately prioritised, under-resourced, and under-staffed. Wildlife law enforcement agencies do not receive sufficient support from high levels of government and may struggle to collaborate with other policing agencies that similarly do not see wildlife crime as a serious crime. There also appears to often be a lack of willingness to implement large-scale investigations into wildlife trafficking syndicates. Interviewees identified many ways where significant improvements have been made in recent years and ongoing positive changes, such as improved mechanisms for sharing information and establishing public-private partnerships for following the money. Wildlife traffickers are creative entrepreneurs, and tectonic shifts are needed to better address illegal wildlife trade and keep up with ever changing trafficking dynamics.

Chapter 6

Dissertation Summary and Conclusions

This research aimed to understand how illegal wildlife trade converges with other types of serious and organised crime activities, the challenges for wildlife law enforcement and other experts who are tasked with combatting organised illegal wildlife trade, and their perceptions on solutions.

6.1 Theoretical and Conceptual Contributions

This thesis has made both theoretical and substantive contributions to the conservation and crime literature. An important theoretical contribution of this research is in the creation and application of a conceptual framework and typology to guide the investigation of crime convergences. This thesis has outlined and characterised the possible variations of crime convergences based on synthesising knowledge reported from a variety of sources around the world (e.g., Anagnostou and Doberstein, 2021; van Uhm and Wong, 2021). These include geographic convergence, contraband barter trade, parallel trafficking (or poly-commodity smuggling/ shipment convergence), common fixers, shared smuggling routes, crime group diversification, and threat finance (funding non-state armed groups including militias, insurgents, and terrorists). In addition, this research identified that convergences can be separated into two distinct types: active and passive crime convergences. Active convergences involve offenders that are actively seeking to engage in multiple illegal activities. This can include through network diversification, or more specifically through

contraband barter trade, parallel trafficking, taxation of wildlife traffickers by other organised crime groups, and threat finance. Active convergences also include occurrences of wildlife traffickers employing enabling crimes such as criminal violence, corruption, and illicit financial flows. Alternatively, crime convergences can be passive when they occur incidentally and are based on environmental factors (i.e., when offenders play a passive role in the overlap between wildlife trafficking and other illegal activities), such as shared/similar *modi operandi*, overlapping trafficking routes, and geographic convergences. Furthermore, the empirical interview-based results have identified an entirely new type of convergence: product convergence. I found that product convergences are products that are composed of multiple types of illegal substances, such as illegal lion parts and heroin. These findings address Research Question 2.

In addition, the theoretical assumption for crime convergence is often that it arises because illegal wildlife trade is considered high profit and low risk (Moreto and van Uhm, 2021), making it appealing to organised crime groups that already have established trafficking infrastructure, often used for illegal drug trade. However, this thesis demonstrates that some criminal networks, having established themselves as successful wildlife traffickers, have then transitioned into drug trafficking and other crimes to maximize their profits.

The results of this study support the notion that illegal wildlife trade indeed converges with other organised crime (Masse et al., 2020), although the duration, extent, and nature of the convergence differs based on a number of factors. Interviewees who had direct knowledge of

cases observed that the nature of convergence depends on natural geography, the species/wildlife product being illegally traded, the organised criminal network itself, and/or specific individuals at certain stages of the supply chain (e.g., a common trusted transporter or corrupt actor). These findings answer Research Question 3. Importantly, the results show that crime convergence does not always equate to organised crime on either side of the convergence. Crimes can converge without a high degree of sophistication and organisation. In addition, my results show that convergences can occur between different levels of different types of trafficking, bridging low sophistication with high sophistication. Crime convergence is complex by nature and context specific, and blanket, sweeping over-generalised claims about the general convergence of international illegal wildlife trade and organised crime groups and/or non-state armed groups should be avoided. Instead, the nuances of these relationships should be considered.

6.2 Methodological Contributions

A methodological contribution of this study is the use of innovative data collection through fieldwork and interviews (n=112) with typically inaccessible law enforcement and intelligence experts. This research is unique in how it gathered insights from these individuals and amplified the voices of many individuals who often cannot publicly express their opinions on their experiences, challenges, and ideas on how best to improve responses.

6.3 Empirical Contributions

A number of empirical contributions emerged from this research. Chapters 4 and 5 provide novel evidence-based findings to answer Research Questions 3 and 4 relating to the convergence of illegal wildlife trade and various forms of serious and organised crime globally. This study added much needed empirical data to support emerging theories of crime convergences (such as, van Uhm and Nijman, 2022) and illegal wildlife trade using perceptions of practitioners that are involved in anti-illegal wildlife trade efforts, rather than using wildlife seizure data (a main source of data for many studies on illegal wildlife trade to date), or participatory approaches that focus on one stage of the supply chain. My research has identified expert perceptions on the types of organised crime that are likely to converge with illegal wildlife trade, how and how often these convergences occur, which wildlife taxa are trafficked by groups involved in converging crimes, and how responses can be improved.

Specifically, this dissertation has contributed to a better understanding of wildlife trafficking in locations that are global hotspots for IWT or are under-researched as potential hotspots, and that are generally used for different stages of supply chains (i.e., source, transit, and destination locations). The focused approach offered detailed analyses of crime convergences and responses in three specific jurisdictions and was used to illustrate the broader theoretical points and patterns internationally. In particular, this study is also among the first to illustrate that organised illegal wildlife trade and complex crime convergence can be a challenge for high-income Global North countries.

My results showed that based on law enforcement evidence and experience, illegal wildlife trade does in fact relate to a number of active convergences, including illegal drug trade, including cocaine, cannabis, and heroin; as well as sex trafficking; child prostitution; trade in human body parts; migrant smuggling; forced and bonded labour; illegal alcohol trade; illegal firearms trade; vehicle theft and trafficking; counterfeit and pirated goods trade; and illegal trade in mined resources; among others. These findings answer Research Question 1.

Illegal wildlife trade has been claimed to be "low hanging fruit" for law enforcement (personal observation at conferences). However, the results of the study highlight that organised crime tactics including multiple forms of corruption, coercion, forced labour, violence, and money laundering are used by wildlife traffickers. Corruption is systemic in South Africa and reportedly arises as a stumbling block at every step of counter wildlife-trafficking efforts. Corruption is little understood in Hong Kong, where most interviewees have never encountered it, but a few suspected it existed, and a couple of others provided concrete examples. In Canada, interviewees did not have knowledge about corruption being used to facilitate illegal wildlife trade among wildlife law enforcement personnel, although multiple participants noted examples where police became involved. This study was among the first to find that corruption exists as an enabler of illegal wildlife trade in contexts lacking systemic corruption.

Violence against criminal offenders and against investigators, witnesses, and informers is common and increasing in South Africa. In Hong Kong, violence linked to illegal wildlife

trade is rare and most commonly manifests by smuggling speedboats ramming police vessels. Verbal threats have also been common. The use of violence by wildlife traffickers appears to be uncommon overall in Canada, although a few provinces have reported it as a significant concern. The prompts that interviewees were given regarding illicit financial flows included, money laundering, including shell and front companies, and trade-based money laundering; hawalas/ similar service; bribery; fraud; embezzlement; and bulk cash smuggling. Through the course of the research, all of these were identified with ties to illegal wildlife trade. The movement of money domestically at the lower levels of illegal wildlife trade is often cash-based. The use of intermediaries and money transfer services is common at the international level as much illegal wildlife trade can appear as regular import-export trade and transactions. Money is also laundered through casinos, properties, vehicles, and cash intensive businesses. Informal underground banking systems are used, and professional money launderers create apparatuses for moving the proceeds of crime that are sold to criminal networks, including wildlife traffickers. These findings answer Research Question 4.

6.4 Practical/Applied/Policy Contributions

This research also makes numerous substantive contributions that have important policy implications. The challenges and opportunities identified in Chapter 5 have significant real-world applicability. As calls for more collaborative international investigations into illegal wildlife trade and converging crimes increase globally, it is important to consider that there are valid barriers to practical implementation. For instance, recommendations for ‘following

the money' have risen in popularity in recent years. However, accessing, understanding, and sharing information on financial transactions can be complicated and time consuming. In addition to evident capacity and resource constraints, there are legal, cultural, organizational, and political barriers that continue to impede interdepartmental, interagency, and international collaboration.

Chapter 5 of this PhD identified specific recommendations to improve responses to counter IWT and converging criminal networks that are concretely based on the people who actually have to implement counter-wildlife trafficking interventions. These findings answer Research Question 4.

6.5 Limitations and Future Research

The main limitation to this research is that the data collection process focused on understanding the perceptions of individuals who work in wildlife law enforcement and related professions that are dedicated to countering illegal wildlife trade. While this approach is incredibly valuable for understanding the challenges and barriers to dismantling organised wildlife trafficking networks, the knowledge on how convergences arise is indirect and one layer removed from the perceptions of actual wildlife traffickers themselves. However, this is not considered a major limitation, as research on perceptions can be powerful and holistic, and interventions identified can be easily incorporated into decision making to improve conservation success at local to international levels (Bennet, 2016). In addition, perceptions of people involved in organised illegal wildlife trade may be unreliable so as to not aid

interdiction. Nevertheless, future research could identify ways to safely and more directly engage with individuals involved in converging networks to understand their true motivations for crime convergence (e.g., see Wong, 2015 on fieldwork with wildlife traffickers). Additionally, considering the number of convergences reported in Canada - a country that has received limited academic attention in the field of IWT - further research should be conducted to understand the dynamics of IWT in other similarly overlooked countries.

One of the disadvantages to my qualitative approach in the present study, is that since it is a PhD thesis, I was the sole researcher coding the data. This means that I did not have an opportunity to validate my data analysis by comparing it with the codes of other researchers on the same text. Castleberry and Nolen (2018) summarise two ways to overcome these limitations: (1) assessing my own intra-coder reliability by coding a portion of the data correctly, and then re-coding the same data after a few days with the aim of consistency, and (2) reviewing emerging themes and confirming them with my advisor, and one or two highly involved study participants. Both approaches were applied. Another downside to qualitative research is that there is a low level of standardization of relevant definitions, which can vary from the researcher and participants (Mohajan, 2018). To mitigate the lack of standardization, I explained the term "crime convergence" at the start of every interview, to ensure that participants are aware of the type of information the study is looking for. Lastly, the subjective nature of qualitative data makes it difficult to apply conventional standards of reliability and validity (Mohajan, 2018). Therefore, confidence in the findings requires a high

degree of transparency in how the data are collected and analysed (Castleberry and Nolen, 2018).

6.5 Conclusions

Transnational organised crime networks are becoming more interconnected, and networks involved in illegal wildlife trade networks may increasingly converge with other crime types. By disentangling and demystifying these crime convergences, the results of this thesis have contributed to significant advancements towards a more evidence-informed understanding of illegal wildlife trade as a type of organised crime, and how it relates to other types of serious and organised crime activities. This thesis has provided the foundational understanding on crime convergence for law enforcement and civil society practitioners, policy makers and researchers, allowing the issue to be more readily tackled. Crime convergences are varied, complex, dynamic, and insufficiently researched. Further deconstruction of crime convergence is vital for effective wildlife law enforcement.

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Appendix
Supplementary Information

Figure S1. The proportion of each species or wildlife product that was reported in the literature as converging with other serious and organised crime.

Figure S2. Treemap showing the types of serious and organised crime activities that converged with the illegal wildlife trade. The size and color of the rectangles correspond to the number of times they were reported in the literature.

Figure S3. The crime convergences between illegal wildlife trade and other organised crime, showing the links from all wildlife species/ products to all other crimes, and how they are related (types of convergences).

Figure S4. Convergences between non-aggregate wildlife species/ products list and the non-aggregate list of other crimes. This figure shows the general links between illegal wildlife trade and other organised crime activities, without displaying the types of convergences.

Table S1. Lists of aggregate groupings of data collected on the taxa/ wildlife products in IWT, and the other serious and organised crime types.

Table S2. Organised crime networks and non-state armed groups whose activities have purportedly converged (actively or passively) with the illegal wildlife trade.

Table S3. Full list of relevant publications.

Document S1. Information Letter for Participants

Document S2. Interview Guide

Figure S1

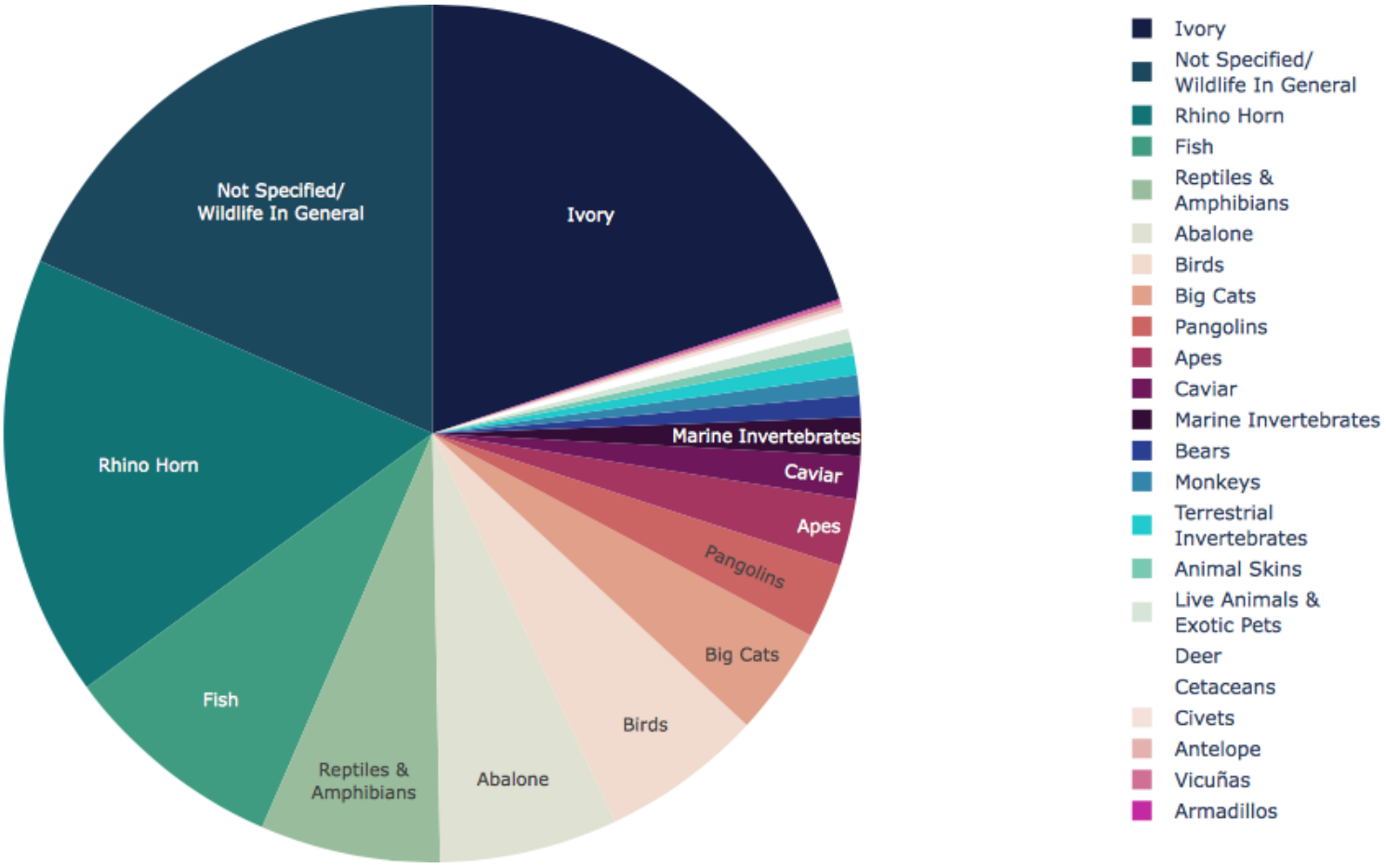


Figure S2

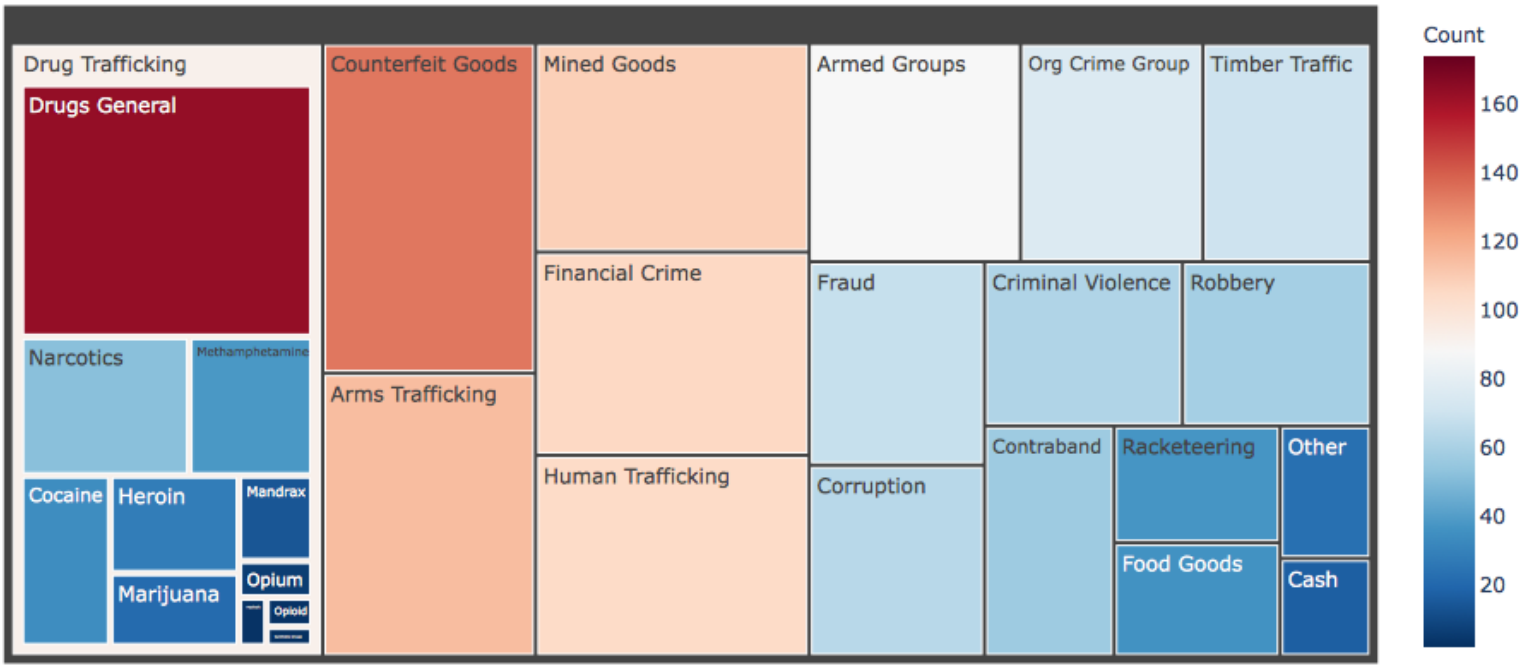


Figure S3

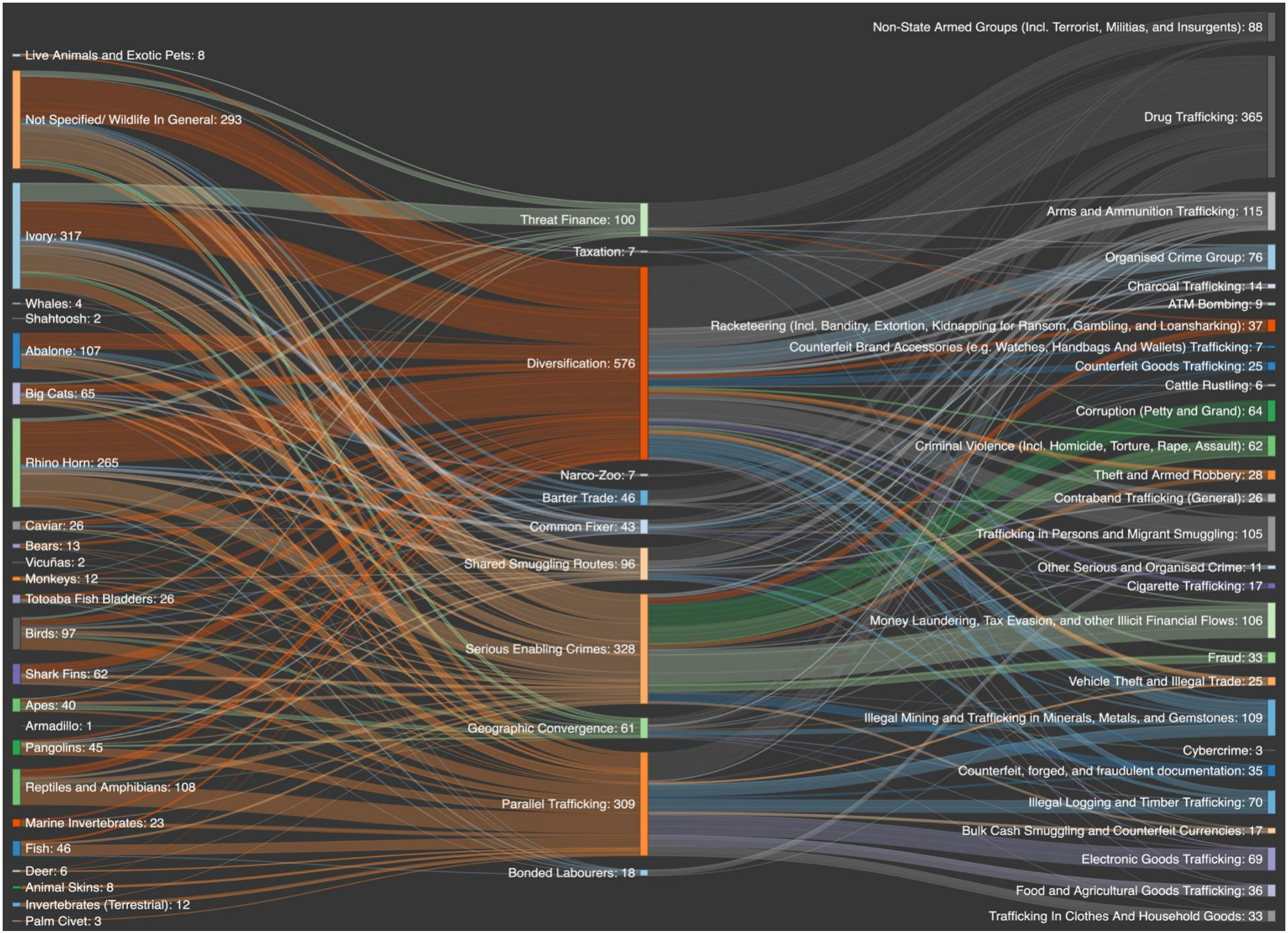

Live Animals and Exotic Pets: 8
Not Specified/ Wildlife In General: 293
Ivory: 317
Whales: 4
Shahtoosh: 2
Abalone: 107
Big Cats: 65
Rhino Horn: 265
Caviar: 26
Bears: 13
Vicuñas: 2
Monkeys: 12
Totoaba Fish Bladders: 26
Birds: 97
Shark Fins: 62
Apes: 40
Armadillo: 1
Pangolins: 45
Reptiles and Amphibians: 108
Marine Invertebrates: 23
Fish: 46
Deer: 6
Animal Skins: 8
Invertebrates (Terrestrial): 12
Palm Civet: 3
Threat Finance: 100
Taxation: 7
Diversification: 576
Narco-Zoo: 7
Barter Trade: 46
Common Fixer: 43
Shared Smuggling Routes: 96
Serious Enabling Crimes: 328
Geographic Convergence: 61
Parallel Trafficking: 309
Bonded Labourers: 18
Non-State Armed Groups (Incl. Terrorist, Militias, and Insurgents): 88
Drug Trafficking: 365
Arms and Ammunition Trafficking: 115
Organised Crime Group: 76
Charcoal Trafficking: 14
ATM Bombing: 9
Racketeering (Incl. Banditry, Extortion, Kidnapping for Ransom, Gambling, and Loansharking): 37
Counterfeit Brand Accessories (e.g. Watches, Handbags And Wallets) Trafficking: 7
Counterfeit Goods Trafficking: 25
Cattle Rustling: 6
Corruption (Petty and Grand): 64
Criminal Violence (Incl. Homicide, Torture, Rape, Assault): 62
Theft and Armed Robbery: 28
Contraband Trafficking (General): 26
Trafficking in Persons and Migrant Smuggling: 105
Other Serious and Organised Crime: 11
Cigarette Trafficking: 17
Money Laundering, Tax Evasion, and other Illicit Financial Flows: 106
Fraud: 33
Vehicle Theft and Illegal Trade: 25
Illegal Mining and Trafficking in Minerals, Metals, and Gemstones: 109
Cybercrime: 3
Counterfeit, forged, and fraudulent documentation: 35
Illegal Logging and Timber Trafficking: 70
Bulk Cash Smuggling and Counterfeit Currencies: 17
Electronic Goods Trafficking: 69
Food and Agricultural Goods Trafficking: 36
Trafficking In Clothes And Household Goods: 33

Figure S4

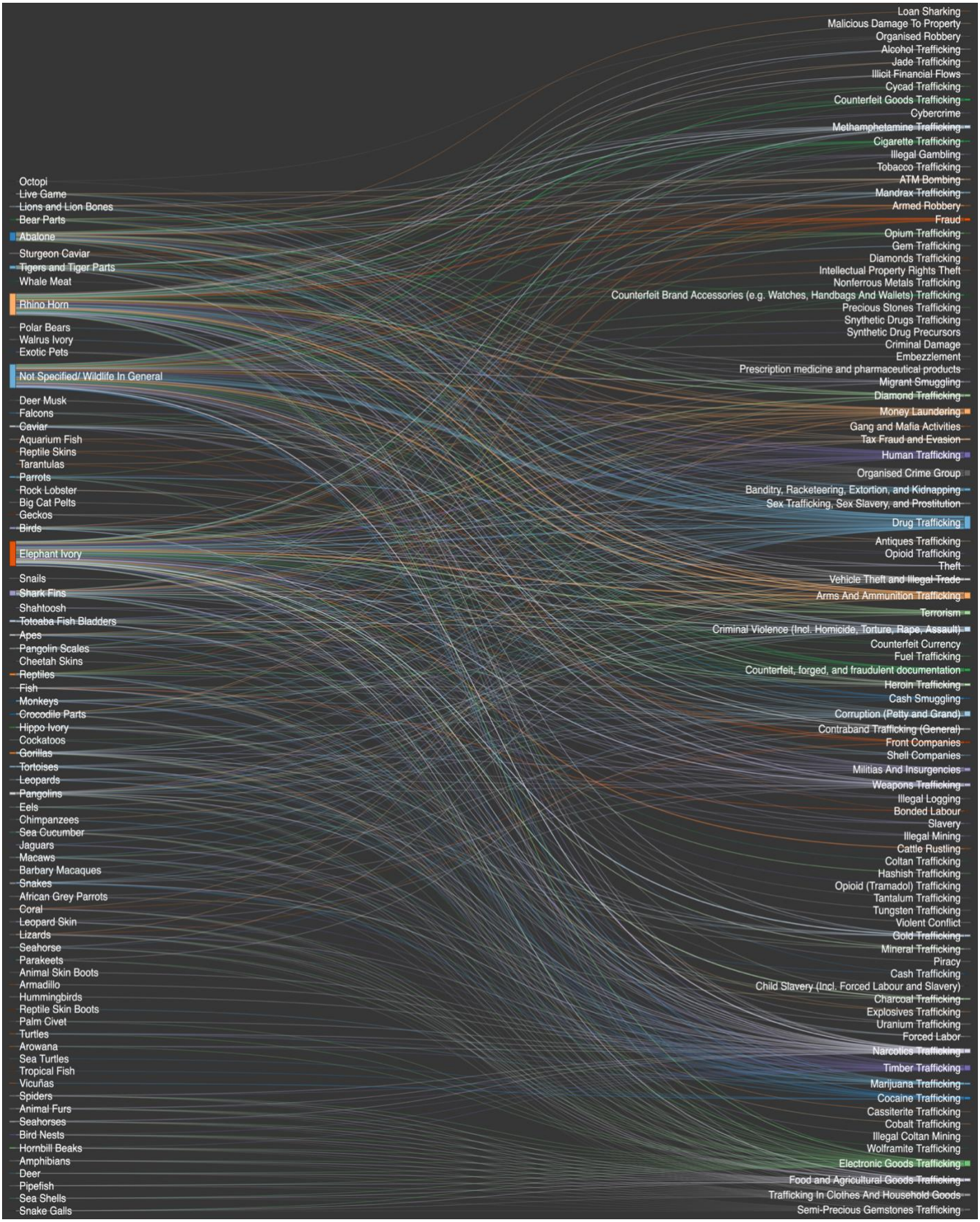

Octopi
Live Game
Lions and Lion Bones
Bear Parts
Abalone
Sturgeon Caviar
Tigers and Tiger Parts
Whale Meat
Rhino Horn
Polar Bears
Walrus Ivory
Exotic Pets
Not Specified/ Wildlife In General
Deer Musk
Falcons
Caviar
Aquarium Fish
Reptile Skins
Tarantulas
Parrots
Rock Lobster
Big Cat Pelts
Geckos
Birds
Elephant Ivory
Snails
Shark Fins
Shahtoosh
Totoaba Fish Bladders
Apes
Pangolin Scales
Cheetah Skins
Reptiles
Fish
Monkeys
Crocodile Parts
Hippo Ivory
Cockatoos
Gorillas
Tortoises
Leopards
Pangolins
Eels
Chimpanzees
Sea Cucumber
Jaguars
Macaws
Barbary Macaques
Snakes
African Grey Parrots
Coral
Leopard Skin
Lizards
Seahorse
Parakeets
Animal Skin Boots
Armadillo
Hummingbirds
Reptile Skin Boots
Palm Civet
Turtles
Arowana
Sea Turtles
Tropical Fish
Vicuñas
Spiders
Animal Furs
Seahorses
Bird Nests
Hornbill Beaks
Amphibians
Deer
Pipefish
Sea Shells
Snake Galls
Loan Sharking
Malicious Damage To Property
Organised Robbery
Alcohol Trafficking
Jade Trafficking
Illicit Financial Flows
Cycad Trafficking
Counterfeit Goods Trafficking
Cybercrime
Methamphetamine Trafficking
Cigarette Trafficking
Illegal Gambling
Tobacco Trafficking
ATM Bombing
Mandrax Trafficking
Armed Robbery
Fraud
Opium Trafficking
Gem Trafficking
Diamonds Trafficking
Intellectual Property Rights Theft
Nonferrous Metals Trafficking
Counterfeit Brand Accessories (e.g. Watches, Handbags And Wallets) Trafficking
Precious Stones Trafficking
Snythetic Drugs Trafficking
Synthetic Drug Precursors
Criminal Damage
Embezzlement
Prescription medicine and pharmaceutical products
Migrant Smuggling
Diamond Trafficking
Money Laundering
Gang and Mafia Activities
Tax Fraud and Evasion
Human Trafficking
Organised Crime Group
Banditry, Racketeering, Extortion, and Kidnapping
Sex Trafficking, Sex Slavery, and Prostitution
Drug Trafficking
Antiques Trafficking
Opioid Trafficking
Theft
Vehicle Theft and Illegal Trade
Arms And Ammunition Trafficking
Terrorism
Criminal Violence (Incl. Homicide, Torture, Rape, Assault)
Counterfeit Currency
Fuel Trafficking
Counterfeit, forged, and fraudulent documentation
Heroin Trafficking
Cash Smuggling
Corruption (Petty and Grand)
Contraband Trafficking (General)
Front Companies
Shell Companies
Militias And Insurgencies
Weapons Trafficking
Illegal Logging
Bonded Labour
Slavery
Illegal Mining
Cattle Rustling
Coltan Trafficking
Hashish Trafficking
Opioid (Tramadol) Trafficking
Tantalum Trafficking
Tungsten Trafficking
Violent Conflict
Gold Trafficking
Mineral Trafficking
Piracy
Cash Trafficking
Child Slavery (Incl. Forced Labour and Slavery)
Charcoal Trafficking
Explosives Trafficking
Uranium Trafficking
Forced Labor
Narcotics Trafficking
Timber Trafficking
Marijuana Trafficking
Cocaine Trafficking
Cassiterite Trafficking
Cobalt Trafficking
Illegal Coltan Mining
Wolframite Trafficking
Electronic Goods Trafficking
Food and Agricultural Goods Trafficking
Trafficking In Clothes And Household Goods
Semi-Precious Gemstones Trafficking

Table S1. Lists of aggregate groupings of data collected on the taxa/ wildlife products in IWT, and the other serious and organised crime types.

The following list indicates the aggregations used for wildlife species/ products that were illegally traded:
'Abalone':'Abalone', 'African Grey Parrots':'Birds', 'Amphibians':'Reptiles and Amphibians', 'Animal Furs':'Animal Skins' , 'Animal Skin Boots':'Animal Skins', 'Apes':'Apes', 'Aquarium Fish':'Fish', 'Armadillo':' Armadillos', 'Arowana':'Fish', 'Barbary Macaques':'Monkeys', 'Bear Parts' : 'Bears', 'Big Cat Pelts':'Big Cats', 'Bird Nests':'Birds', 'Birds':'Birds', 'Caviar':'Caviar', 'Cheetah Skins': 'Big Cats', 'Chimpanzees':'Apes', 'Cockatoos':'Birds', 'Coral': 'Marine Invertebrates', 'Crocodile Parts': 'Reptiles and Amphibians', 'Deer':'Deer', 'Deer Musk':'Deer', 'Eels': 'Fish', 'Elephant Ivory':'Ivory', 'Exotic Pets': 'Live Animals and Pets' , 'Falcons':'Birds', 'Fish':'Fish', 'Geckos':'Reptiles and Amphibians', 'Gorillas':'Apes', 'Hippo Ivory':'Ivory', 'Hornbill Beaks':'Birds', 'Hummingbirds':'Birds', 'Jaguars':'Big Cats', 'Leopard Skin':'Big Cats', 'Leopards':'Big Cats',

'Lions and Lion Bones':'Big Cats',
'Live Game': 'Live Animals and Pets',
'Lizards':'Reptiles and Amphibians',
'Macaws':'Birds',
'Monkeys':'Monkeys',
'Not Specified/ Wildlife In General': 'Not Specified/ Wildlife In General',
'Octopi': 'Marine Invertebrates',
'Palm Civet':'Civets',
'Pangolin Scales':'Pangolins',
'Pangolins':'Pangolins',
'Parakeets':'Birds',
'Parrots':'Birds',
'Pipefish':'Fish',
'Polar Bears':'Bears',
'Reptile Skin Boots':'Reptiles and Amphibians',
'Reptile Skins':'Reptiles and Amphibians',
'Reptiles': 'Reptiles and Amphibians',
'Rhino Horn':'Rhino Horn',
'Rock Lobster': 'Marine Invertebrates',
'Sea Cucumber': 'Marine Invertebrates',
'Sea Shells': 'Marine Invertebrates',
'Sea Turtles':'Reptiles and Amphibians',
'Seahorse':'Fish',
'Seahorses':'Fish',
'Shahtoosh':'Antelope',
'Shark Fins':'Fish',
'Snails': 'Terrestrial Invertebrates',
'Snake Galls':'Reptiles and Amphibians',
'Snakes':'Reptiles and Amphibians',
'Spiders':'Terrestrial Invertebrates',
'Sturgeon Caviar':'Caviar',
'Tigers and Tiger Parts':'Big Cats',
'Tortoises':'Reptiles and Amphibians',
'Totoaba Fish Bladders': 'Fish',
'Tropical Fish':'Fish',
'Turtles':'Reptiles and Amphibians',
'Vicuñas':' Vicuñas',
'Walrus Ivory':'Ivory',
'Invertebrates (Terrestrial)': 'Terrestrial Invertebrates',
'Whales':'Cetaceans'}

The following list indicates the level 1 aggregations for the other serious and organised crimes:

'Drug Trafficking': 'Drug Trafficking',
'Mandrax Trafficking': 'Drug Trafficking',
'Methamphetamine Trafficking': 'Drug Trafficking',
'Bonded Labour': 'Trafficking in Persons and Migrant Smuggling',
'Armed Robbery' : 'Theft and Organised Robbery',
'Theft and Armed Robbery' : 'Theft and Organised Robbery',
'Arms And Ammunition Trafficking': 'Arms, Weapons, Ammunition and Parts Trafficking',
'ATM Bombing': 'Other Serious and Organised Crime',
'Counterfeit Goods Trafficking': 'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)',
'Cycad Trafficking': 'Contraband Trafficking (General)',
'Diamond Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Heroin Trafficking': 'Drug Trafficking',
'Human Trafficking': 'Trafficking in Persons and Migrant Smuggling',
'Illegal Gambling': 'Racketeering (Incl. Banditry, Extortion, Kidnapping for Ransom, Illegal Gambling, and Loansharking)',
'Migrant Smuggling': 'Trafficking in Persons and Migrant Smuggling',
'Narcotics Trafficking': 'Drug Trafficking',
'Organised Crime Group': 'Organised Crime Group Involvement',
'Prescription medicine and pharmaceutical products': 'Drug Trafficking',
'Sex Trafficking, Sex Slavery, and Prostitution': 'Trafficking in Persons and Migrant Smuggling',
'Vehicle Theft and Illegal Trade': 'Theft and Organised Robbery',
'Cash Smuggling': 'Bulk Cash Smuggling and Counterfeit Currencies',
'Counterfeit, forged, and fraudulent documentation'
'Banditry, Racketeering, Extortion, and Kidnapping': 'Racketeering (incl. Banditry, Extortion, Kidnapping for Ransom, Illegal Gambling, and Loansharking)',
'Corruption (Petty and Grand)'
'Criminal Violence (Incl. Homicide, Torture, Rape, Assault)'
'Fraud': 'Fraud (General)',
'Loan Sharking': 'Racketeering (Incl. Banditry, Extortion, Kidnapping for Ransom, Illegal Gambling, and Loansharking)',
'Money Laundering': 'Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Tax Fraud and Evasion': 'Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Cigarette Trafficking': 'Contraband Trafficking (General)',
'Trafficking In Clothes And Household Goods': 'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)',
'Charcoal Trafficking': 'Contraband Trafficking (General)',

'Electronic Goods Trafficking': 'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)',
'Timber Trafficking' : 'Illegal Logging and Timber Trafficking',
'Militias And Insurgencies': 'Non-State Armed Groups (Incl. Terrorist, Militias, and Insurgents)',
'Food and Agricultural Goods Trafficking'
'Semi-Precious Gemstones Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Trafficking In Clothes And Household Goods' : 'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)',
'Illegal Logging': 'Illegal Logging and Timber Trafficking',
'Illegal Mining': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Cocaine Trafficking': 'Drug Trafficking',
'Marijuana Trafficking': 'Drug Trafficking',
'Shell Companies': 'Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Front Companies': 'Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Counterfeit Brand Accessories (E.G. Watches, Handbags And Wallets) Trafficking': 'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)',
'Opium Trafficking': 'Drug Trafficking',
'Terrorism': 'Non-State Armed Groups (Incl. Terrorist, Militias, and Insurgents)',
'Weapons Trafficking': 'Arms, Weapons, Ammunition and Parts Trafficking',
'Cash Trafficking': 'Bulk Cash Smuggling and Counterfeit Currencies',
'Gold Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Cattle Rustling': 'Theft and Organised Robbery',
'Counterfeit Currency' : 'Bulk Cash Smuggling and Counterfeit Currencies',
'Explosives Trafficking': 'Arms, Weapons, Ammunition and Parts Trafficking',
'Antiques Trafficking' : 'Contraband Trafficking (General)',
'Coltan Trafficking':'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Fuel Trafficking': 'Contraband Trafficking (General)',
'Hashish Trafficking':'Drug Trafficking',
'Mineral Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Opioid (Tramadol) Trafficking':'Drug Trafficking',
'Slavery' : 'Trafficking in Persons and Migrant Smuggling',
'Theft': 'Theft and Organised Robbery',
'Uranium Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Child Slavery (Incl. Forced Labour and Slavery)': 'Trafficking in Persons and Migrant Smuggling',
'Opioid Trafficking':'Drug Trafficking',
'Tantalum Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Tungsten Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',

'Violent Conflict': 'Criminal Violence (Incl. Homicide, Torture, Rape, Assault)',
'Forced Labor': 'Trafficking in Persons and Migrant Smuggling',
'Cassiterite Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Cobalt Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Illegal Coltan Mining': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Wolframite Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Contraband Trafficking (General)': 'Contraband Trafficking (General)',
'Gem Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Alcohol Trafficking': 'Contraband Trafficking (General)',
'Diamonds Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Gang and Mafia Activities': 'Organised Crime Group Involvement',
'Intellectual Property Rights Theft' : 'Other Serious and Organised Crime',
'Jade Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Nonferrous Metals Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Arms and Ammunition Trafficking': 'Arms, Weapons, Ammunition and Parts Trafficking',
'Precious Stones Trafficking': 'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones',
'Snythetic Drugs Trafficking': 'Drug Trafficking',
'Tobacco Trafficking': 'Contraband Trafficking (General)',
'Synthetic Drug Precursors' :'Drug Trafficking',
'Criminal Damage': 'Other Serious and Organised Crime',
'Cybercrime': 'Other Serious and Organised Crime',
'Embezzlement': ' Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Illicit Financial Flows': 'Money Laundering, Tax Evasion, and other Illicit Financial Flows',
'Organised Robbery': 'Theft and Organised Robbery',
'Malicious Damage To Property' : 'Other Serious and Organised Crime',
'Piracy': 'Other Serious and Organised Crime'

The following list indicates the level 2 aggregations for the serious and organised crimes:

'Drug Trafficking': 'Drug Trafficking',
'Non-State Armed Groups (Incl. Terrorist, Militias, and Insurgents)': 'Armed Groups',
'Money Laundering, Tax Evasion, and other Illicit Financial Flows': 'Financial Crime',
'Arms, Weapons, Ammunition and Parts Trafficking': 'Arms Trafficking',
'Trafficking in Persons and Migrant Smuggling': 'Human Trafficking',
'Corruption (Petty and Grand)': 'Corruption',
'Illegal Mining and Trafficking in Minerals, Metals, and Gemstones': 'Mined Goods Trafficking',
'Organised Crime Group Involvement': 'Organised Crime Group',
'Criminal Violence (Incl. Homicide, Torture, Rape, Assault)': 'Criminal Violence',
'Counterfeit Goods Trafficking (Inc. Electronics, Accessories, Clothing)': 'Counterfeit Goods',
'Fraud': 'Fraud',
'Theft and Organised Robbery': 'Robbery',
'Illegal Logging and Timber Trafficking': 'Timber Trafficking',
'Contraband Trafficking (General)': 'Other Contraband',
'Racketeering (Incl. Banditry, Extortion, Kidnapping for Ransom, Gambling, and Loansharking)': 'Racketeering',
'Food and Agricultural Goods Trafficking': 'Agri. Goods Trafficking',
'Counterfeit, forged, and fraudulent documentation ': 'Fraud',
'Bulk Cash Smuggling and Counterfeit Currencies': 'Cash Smuggling',
'Other Serious and Organised Crime': 'Other Serious Crimes'

Table S2. Organised crime networks and non-state armed groups that have purportedly converged (actively or passively) with the illegal wildlife trade.

Taxa / Wildlife Product	Organised Crime / Non-State Armed Group
Abalone	14k
	Chumlong Lemtongthai Network
	San Yee On
	Table Mountain Gang
	Triads
	Wo Shing Wo
Bear Parts	Al Mujahideen
	Harkat-Ul-Jihad-Al-Islami (HUJI)

	Jama'atul Mujahideen Bangladesh (JMB)
	Russian Mafia/ Russian Organised Crime Group
Big Cat Pelts	Al Mujahideen
	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
Birds (General)	Former Cali Cartel
	Former Medellin Cartel
	Tabraue Syndicate
Caviar	Japanese Yakuza
	Red Mafia
	Russian Mafia/ Russian Organised Crime Group
Eels	Triads
Elephant Ivory	14k
	Akasha Network
	Al Shabaab
	Allied Democratic Forces (ADF)
	Ahlu Sunnah Wal Jamaah (ASWJ)
	Angola's National Union For The Total Independence Of Angola
	Boko Haram
	Chumlong Lemtongthai Network
	Congolese Army
	Democratic Forces For The Defense Of Rwanda (FDLR)
	Former Cali Cartel
	Harakat Uljihad-Islami-Bangladesh (HUJI-B)
	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
	Janjaweed
	Japanese Yakuza
	Kromah Network
	Lord's Resistance Army
	M23
	Mai Mai Morgan
	Mai-Mai Militias
	Mohamed Bachir Suleman
	Mozambican National Resistance (RENAMO)
	National Congress For The Defense Of The People (CNDP)
	Rwandan Democratic Liberation Forces (FDLR)
	Séléka
	Shuidong Syndicate

	Sudan People's Liberation Army
	Triads
	Union Pour La Rehabilitation De La Démocratie Du Congo (URDC)
	Wo Shing Wo
Elephant Parts	Al Mujahideen
(Other than Tusks)	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
Falcons	Former Medellin Cartel
	Italian Mafia
Gorillas	Democratic Forces For The Defence Of Rwanda (FDLR)
	M23
	Mai-Mai Militias
	Union Pour La Rehabilitation De La Démocratie Du Congo RDC)
Jaguars	Fujian syndicate
Hippo Ivory	Democratic Forces For The Defence Of Rwanda (FDLR)
	Janjaweed
	Lord's Resistance Army
	Mai Mai Morgan
Leopards	Tabraue Syndicate
Lions	Los Zetas
Monkeys	Al Mujahideen
	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
	Tabraue Syndicate
Not Specified/ Wildlife	Al Shabaab
In General	Ahlu Sunnah Wal Jamaah (ASWJ)
	Colombian Cartels
	Former Cali Cartel
	Former Medellin Cartel
	Janjaweed
	Lord's Resistance Army
	Shining Path
	Sinaloa Cartel
	Tabraue Syndicate
	Triads
	Anson Wong Network
Pangolins	Ahlu Sunnah Wal Jamaah (ASWJ)
	Togiman Network
Parrots	Former Medellin Cartel
	Italian Mafia

	Neapolitan Mafia
Reptiles	Former Medellin Cartel
	Tabraue Syndicate
Rhino Horn	14k
	Akasha Network
	Al Mujahideen
	Al Shabaab
	Ahlu Sunnah Wal Jamaah (ASWJ)
	Bach Network
	Chumlong Lemtongthai Network
	Former Medellin Cartel
	Groenewald Syndicate/ Boere Mafia
	Harakat Uljihad-Islami-Bangladesh (HUJI-B)
	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
	Janjaweed
	Japanese Yakuza
	Karbi People's Liberation Tiger (KPLT)
	Keosavang Network
	Kuki National Army (KNA)
	Mohamed Bachir Suleman Network
	Mozambican National Resistance (RENAMO)
	Rathkeale Rovers
	Russian Mafia/ Russian Organised Crime Group
	San Yee On
	Table Mountain Gang
	Triads
	Vannasang Network
	Wo Shing Wo
	Xayasavang Network
Sea Cucumber	Michoacán Cartels
Shark Fins	14k
	Japanese Yakuza
	Los Piratas De Puerto Pizarro
	San Yee On
	Table Mountain Gang
	Taiwanese Mafia
	Triads
	Wo Shing Wo
Tigers and Tiger Parts	14k

	Harakat Uljihad-Islami-Bangladesh (HUJI-B)
	Harkat-Ul-Jihad-Al-Islami (HUJI)
	Jama'atul Mujahideen Bangladesh (JMB)
	Japanese Yakuza
	Los Zetas
	Russian Mafia/ Russian Organised Crime Group
	Tabraue Syndicate
	Wo Shing Wo
Totoaba Fish Bladders	Aispuro Network
	Sinaloa Cartel
	Tijuana Cartel
Whale Meat	14k
	Japanese Yakuza
	Russian Mafia/ Russian Organised Crime Group
	Wo Shing Wo

Table S3. List of relevant publications.

Year	Author	Title	Publisher
2000	Vigne, L., Martin, E.B.	Price for rhino horn increases in Yemen	Pachyderm
2001	RENCTAS	1st National Report on the Traffic of Wild Animals	RENCTAS, Brasilia
2001	Gastrow, P.	Triad Societies and Chinese Organised Crime in South Africa	Institute for Security Studies
2002	Environment News Service	Organized Criminal Gangs Deal Wildlife and Drugs	Environment News Service
2002	Reeve, R.	Policing International Trade in Endangered Species	Earthscan Publications, Ltd
2002	Cook, D., Roberts, M., Lowther, J.	The International Wildlife Trade and Organised Crime A review of the evidence and the role of the UK	University of Wolverhampton
2003	Zimmerman, Mara E.	The Black Market for Wildlife: Combating Transnational Organized Crime in the Illegal Wildlife Trade	Vanderbilt Journal of Transnational Law
2003	Warchol G.L., Zupan L..L, Clack W.	Transnational Criminality: An Analysis of the Illegal Wildlife Market in Southern Africa	International Criminal Justice Review
2004	Naylor, R.T.	The underworld of ivory	Crime, Law & Social Change
2005	World Bank	Going, Going, Gone: The Illegal Trade in Wildlife in East and Southeast Asia	World Bank
2005	Steinberg, J.	The illicit abalone trade in South Africa	Institute for Security Studies
2007	Schoofs, M.	As Meth Trade Goes Global, South Africa Becomes a Hub	Wall Street Journal

2007	Levy, A., Scott-Clark, C.	Poaching for Bin Laden	The Guardian
2007	Kiley, S.	Rare shellfish bartered for drugs	The Guardian
2008	Christy, B.	The Lizard King: The True Crimes and Passions of the World's Greatest Reptile Smugglers	Grand Central Publishing
2009	Okolo B.S., Tambulasi, R.I.C., Quarcoo, S.C., Gossmann, A., Zounmenou, D., Ahmadou, N., Pryce, M.C., Singh, S., Atta-Asamoah, A., Maina, G., Akpuru-Aja, A., Herman, M.	Africa Security Review	Institute for Security Studies
2009	Elliott, L.	Combating transnational environmental crime: 'Joined up' thinking about transnational networks. In: Kangaspunta K and Marshall IH (eds) Eco-Crime and Justice: Essays on Environmental Crime	United Nations Interregional Crime and Justice Research Institute
2009	South, N., Wyatt, T.	Comparing Illicit Trades in Wildlife and Drugs: An Exploratory Study	Deviant Behavior
2009	Rosenberg, M.	Exotic animals trapped in net of drug trade	Reuters
2009	Wyler, L.S., Sheikh, P.A.	International illegal trade in wildlife: Threats and U.S. policy	Illegal Trade In Wildlife
2009	UNEP	The last stand of the Gorilla: Environmental Crime and conflict in the Congo Basin	United Nations Environment Programme
2010	WWF	Rare tortoises and drugs found in abandoned luggage	World Wide Fund for Nature
2011	Europol	European Organised Crime Groups Active in Trafficking Endangered Species	Europol

2011	Europol	OCTA EU Organised Crime Threat Assessment 2011	Europol
2011	Ramsey, G.	Seized 'Narco-Pets' Fill Mexico's Zoos	InSight Crime
2011	Wyatt, T.	The illegal trade of raptors in the Russian Federation	Contemporary Justice Review
2011	Malaysia General News	Wildlife Mafia Plundering Asian Jungles	Malaysia General News
2012	Fox, E.	Colombia Police Rescued Over 46,000 Illegally Trafficked Animals in 2012	InSight Crime
2012	Pachico, E.	Could Brazil's Environmental Law Reform Strengthen Animal Trafficking Networks?	InSight Crime
2012	Anonymous	Illegal Trade in Environmentally Sensitive Goods	Organisation for Economic Co-operation and Development
2012	Europol	Involvement of an Irish Mobile OCG in the Illegal Trade in Rhino Horn - OC-SCAN Policy Brief	Europol
2012	Committee on Foreign Relations	Ivory and Insecurity: The Global Implications of Poaching in Africa	U.S. Government Printing Office
2012	Rademeyer, J.	Killing for Profit	Zebra Press
2012	Van Uhm, D.P.	Organised crime in the wildlife trade	Centre for Information and Research on Organised Crime (CIROC)
2012	Montesh, M.	Rhino poaching: a new form of organised crime	University of South Africa
2012	Milliken, T., Shaw, J.	The South Africa-Viet Nam rhino horn trade nexus: a deadly combination of institutional lapses, corrupt wildlife	TRAFFIC

		industry professionals, and Asian crime syndicates	
2012	O'Keeffe, C., Sheridan, K.	Traveller gang targeted over stolen rhino horns	Irish Examiner
2013	Miklaucic, M., Brewer, J.	Convergence: Illicit Networks and National Security in the Age of Globalization	National Defense University Press
2013	IFAW	Criminal Nature: The Global Security Implications of the Illegal Wildlife Trade	IFAW
2013	Customs and Excise Department (HK)	Customs seizes $60 million worth of smuggled goods on river trade vessel	Customs and Excise Department (HK)
2013	UNEP, CITES, IUCN, TRAFFIC	Elephants in the Dust - the African Elephant Crisis	United Nations Environment Program
2013	Congressional Documents and Publications; Washington	House Natural Resources Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs Hearing: [4]	Federal Information & News Dispatch
2013	Stiles, D., Redmond, I., Cress, D., Nellemann, C., Formo, R.K. (eds)	Stolen Apes the Illicit Trade in Chimpanzees, Gorillas, Bonobos and Orangutans	United Nations Environment Program
2013	UNODC	Transnational Organized Crime in East Asia and the Pacific: A Threat Assessment	United Nations Office on Drugs and Crime
2013	Ayling, Julie	What Sustains Wildlife Crime? Rhino Horn Trading and the Resilience of Criminal Networks	Journal of International Wildlife Law & Policy
2013	Wyatt, T.	Wildlife Trafficking: A Deconstruction of the Crime, the Victims, and the Offenders	Palgrave Macmillan
2014	RUSI	Illicit Wildlife Crime: Entrenched in the Crime, Conflict, and Terror Nexus	Royal United Services Institute
2014	Vira, V., Ewing, T.	Ivory's Curse The Militarization & Professionalization of Poaching in Africa	Center for Advanced Defense Studies, BornFree

2014	Oxpeckers	Official complicity in Mozambican elephant slaughter	Oxpeckers
2014	De Greef, K., Raemaekers, S.	South Africa's Illicit Abalone Trade: An Updates Overview and Knowledge Gap Analysis	TRAFFIC
2014	IUCN	The Disturbing War for Abalone	National Geographic
2014	Nellemann, C., Henriksen, R., Raxter, P., Ash, N., Mrema, E. (eds)	The Environmental Crime Crisis a Rapid Response Assessment Threats to Sustainable Development from Illegal Exploitation and Trade in Wildlife and Forest Resources	United Nations Environment Program
2014	EIA	Vanishing Point Criminality, Corruption and the Devastation of Tanzania's Elephants	Environmental Investigation Agency
2015	Maguire, T., Haenlein, C.	An illusion of complicity	Royal United Services Institute
2015	Bureau of International Narcotics and Law Enforcement Affairs Remarks	Collected Department Releases: Security Turbulences to World Order: Bringing our Humanity and Planet Back Into Balance	US Department of State
2015	Felbab-Brown, V.	Enabling war and peace: Drugs, logs, gems, and wildlife in Thailand and Burma	Brookings Institute
2015	Interpol	Environmental Crime and its Convergence with other Serious Crimes	Interpol
2015	UNEP, MONUSCO, OSESG	Experts' background report on illegal exploitation and trade in natural resources benefitting organized criminal groups and recommendations on MONUSCO's role in fostering stability and peace in eastern DR Congo	UNEP, MONUSCO, OSESG
2015	Tan, A.	Stop wildlife trafficking in its tracks; It is linked to other forms of serious crime, including the drug trade and even terrorism	The Straits Times (Singapore)

2015	Czech enforcement authorities	Trade in rhino horns in the territory of the Czech Republic (SC66 Doc. 51.1 A6)	Convention on International Trade in Endangered Species of Wild Fauna and Flora
2016	Hübschle, A.	A Game of Horns: Transnational Flows of Rhino Horn	International Max Planck Research School on the Social and Political Constitution of the Economy
2016	European Commission	Analysis and Evidence in support of the EU Action Plan against Wildlife Trafficking	European Commission
2016	Luna, D.M.	Combating the Twin Devils of Corruption and Illicit Trade	Organisation for Economic Co-operation and Development
2016	INTERPOL	Environment, Peace and Security: A Convergence of Threats	INTERPOL
2016	Freeland	Frontline Flash: The Illegal Wildlife Trade Transitional Crime Syndicates But There is Hope	Freeland
2016	Duffy, R., Humphreys, J.	I. Poaching, Wildlife Trafficking and Human Security	Whitehall Papers
2016	Haenlein, C., Maguire, T., Somerville, K.	III. Poaching, Wildlife Trafficking and Terrorism	Whitehall Papers
2016	OECD	Illicit Trade - Converging Criminal Networks	Organisation for Economic Co-operation and Development
2016	Mulhall, J.	Irishmen in 'Rathkeale Rovers' gang convicted of plot to steal £57m worth of museum artefacts	Irish Post
2016	Wittig, T.	IV. Poaching, Wildlife Trafficking and Organised Crime	Whitehall Papers

2016	Luna, D.M.	Networked Partnerships to Counter the Dark Side of Globalization: Illicit Trade and the Global Illegal Economy	Organisation for Economic Co-operation and Development
2016	Makhubu, N.	R6m of diamonds, ivory, abalone smuggled on plane	The Mercury
2016	Hubschle, A.	Security coordination in an illegal market: the transnational trade in rhinoceros horn	Politikon
2016	van Uhm, D., Siegel, D.	The illegal trade in black caviar	Trends in Organized Crime
2016	van Uhm, D.	The Illegal Wildlife Trade: Inside the World of Poachers, Smugglers and Traders	Springer
2016	Elephant Action League	The White Gold of Jihad, Al-Shabaab and the Illegal Ivory Trade	Elephant Action League
2016	UNODC	UNODC Annual Report Covering activities during 2015	United Nations Office on Drugs and Crime
2017	Europol	17 Arrested for Smuggling Glass Eels Worth Eur 10 Million	Europol
2017	Southwick, N.	58,000 Trafficked Animals Seized Annually in Colombia	InSight Crime
2017	Shaw, M.	Africa's changing place in the global criminal economy	Institute for Security Studies Papers
2017	Freeland	Airport Insiders Fast Tracking Wildlife Smuggling	Freeland
2017	Bargent, J.	Are Mexican Narcos Moving into Lucrative Fish Bladder Market?	InSight Crime
2017	Yagoub, M.	Chinese Smugglers Driving Up Jaguar Killings in Bolivia	InSight Crime

2017		Collected Department Releases: Trans-Africa Security: Combating Illicit Trafficking and Organized Crime in Africa	ForeignAffairs.co.nz
2017	Elliott, L.	Cooperation on Transnational Environmental Crime: Institutional Complexity Matters	Review of European Comparative & International Environmental Law
2017	The Economist	Do dope-smugglers also peddle ivory?	The Economist
2017	Bargent, J.	Eco-Trafficking in Latin America: The Workings of a Billion-Dollar Business	InSight Crime
2017	UNODC	Enhancing the Detection, Investigation and Disruption of Illicit Financial Flows from Wildlife Crime	United Nations Office on Drugs and Crime
2017	Europol	Europol and TRAFFIC Join Forces to Fight Environmental Crime	Europol
2017	Utermohlen, M., Baine, P.	Flying Under the Radar Wildlife Trafficking in the Air Transport Sector	USAID Reducing Opportunities for Unlawful Transport of Endangered Species
2017	Haenlein, C., Keatinge, T.	Follow the Money Using Financial Investigation to Combat Wildlife Crime	Royal United Services Institute
2017	Lohmuller, M.	How China Fuels Wildlife Trafficking in Latin America	InSight Crime
2017	Batres, A.	Inside Guatemala's Animal Trafficking Trade	InSight Crime
2017	Business Monitor International	Vietnam Country Risk Report	Business Monitor International
2017	Crayne, S., Haenlein, C.	Poaching, Wildlife Trafficking And Conflict	Poaching, Wildl. Traffick. and Secur. in Afr.: Myths and Realities

2017	Asmann, P.	Tentacles of Organized Crime in Mexico Extend to Octopus Theft	InSight Crime
2017	Wells, M.	Thousands Of Dolphins Slaughtered Off Peru Coast	InSight Crime
2017	Cawley, M.	Thousands of Trafficked Frogs, Snakes, Spiders Return to Paraguay	InSight Crime
2017	Gulati, V.	Wildlife experts favour science to counter trafficking	Earth Journalism Network
2018	Gardiner, C.H.	Bolivia Bust Shows Demand for Wildlife in China	InSight Crime
2018	van Uhm, D., Moreto, W.D.	Corruption within the Illegal Wildlife Trade: A Symbiotic and Antithetical Enterprise	British Journal of Criminology
2018	TRAFFIC	EMPTY SHELLS An assessment of abalone poaching and trade from southern Africa	TRAFFIC
2018	U.S. House of Representatives Documents	House Foreign Affairs Committee Hearing	Congressional Documents and Publications; Washington
2018	Miller, N.A., Roan, A., Hochberg, T., Amos, J., Kroodsma, D.A.	Identifying Global Patterns of Transshipment Behavior	Frontiers in Marine Science
2018	Webster, N.	Illegal wildlife trade 'funnelled back to organised crime in the region'	The National
2018	Utermohlen, M., Baine, P.	In Plane Sight wildlife trafficking in the air transport sector	USAID Reducing Opportunities for Unlawful Transport of Endangered Species
2018	ENACTAfrica.org	Is Côte d'Ivoire becoming a wildlife trafficking hotspot?	ENACT: Enhancing Africa's response to transnational organised crime

2018	DEFRA	London Conference on the Illegal Wildlife Trade (October 2018): Declaration	Department for Environment, Food and Rural Affairs
2018	Michel, D.R.	Militarization of Conservation	CUNY Academic Works
2018	Interpol, ENACT	Overview of Serious and Organized Crime in Africa	Interpol, ENACT
2018	Interpol, ENACT	Overview of Serious and Organized Crime in Central Africa	Interpol, ENACT
2018	Interpol, ENACT	Overview of Serious and Organized Crime in East Africa	Interpol, ENACT
2018	Interpol, ENACT	Overview of Serious and Organized Crime in the Southern African Region	Interpol, ENACT
2018	Interpol, ENACT	Overview of Serious and Organized Crime in West Africa	Interpol, ENACT
2018	Hasham, N.	Probe reveals organised crime, forgery driving Australia's illegal wildlife trade	The Sydney Morning Herald
2018	Ganesan, R.	Stop the shame China! The lifting of the ban on using tiger and rhino parts is a call for their extinction	Daily O
2018	Shelley, L., Kinnard, K.	The Convergence of Trade in Illicit Rhino Horn and Elephant Ivory with other Forms of Criminality	Temple University Press
2018	Felbab-Brown, V.	The Extinction Market	Oxford University Press
2018	Symes, W.S., McGrath, F.L., Rao, M., Carrasco, L.R.	The gravity of wildlife trade	Biological Conservation
2018	ADMCF	Trading in Extinction: The Dark Side of Hong Kong’s Wildlife Trade	ADM Capital Foundation
2018	Felbab-Brown, V.	Wildlife and Drug Trafficking, Terrorism, and Human Security:	Brookings Institute

		Realities, Myths, and Complexities Beyond Africa	
2018	van Uhm, D.	Wildlife and laundering Interaction between the under and upper world	Green Crimes and Dirty Money
2018	Wyatt, T.	Wildlife Trafficking and Organised Crime Groups | Shoc	Royal United Services Institute
2018	Carrillo-Páez, C.C.	Wildlife Trafficking by Parcel Service: A National Problem that Threatens Biodiversity (in Green Crime in Mexico eds. Ines Arroyo-Quiroz, Tanya Wyatt)	Palgrave Studies in Green Criminology
2019	TRAFFIC	Africa's Illegal Wildlife Trade Bi-annual wildlife enforcement newsletter	TRAFFIC
2019	Verheij, P., Verheij, P.	An Assessment of Wildlife Poaching and Trafficking in Bolivia and Suriname	International Union for Conservation of Nature
2019	Karl Wilson in Sydney	ASEAN vows to rein illegal wildlife trade	China Daily
2019	Chelin, R.	Assessing strategies for countering illegal trafficking of pangolins in Africa	ENACT: Enhancing Africa's response to transnational organised crime
2019	Castellanos, N.	Colombia Fails to Tackle Illegal Fishing in Malpelo Reserve	InSight Crime
2019	Global Initiative	Dialogue on Organized Crime Illicit markets in an era of connectivity	GITOC
2019	Robbins, S.	Fish Bladder Is Big Business For Chinese and Mexican Smugglers	InSight Crime
2019	ENACTAfrica.org	Illegal fishing in Lake Victoria endangers livelihoods and species	ENACT: Enhancing Africa's response to transnational organised crime
2019	Financial Crime News	Illegal Wildlife Trafficking Intelligence Briefing	Financial Crime News

2019	Department of Justice U.S. Attorney's Office	Members Of African Criminal Enterprise Charged With Large-Scale Trafficking Of Rhinoceros Horns And Elephant Ivory And Heroin Distribution	Department of Justice
2019	Robbins, S.	Peru Wildlife Agency Eases Export of Illegal Shark Fins	InSight Crime
2019	UNODC	Scaling Back Corruption - A Guide on Addressing Corruption for Wildlife Management Authorities	United Nations Office on Drugs and Crime
2019	Brush, A.	Strings Attached: Exploring the Onshore Networks Behind Illegal, Unreported, & Unregulated Fishing	Center for Advanced Defense Studies
2019	Moreto, W.D., Charlton, R.W., DeWitt, S.E., Burton, C.M.	The Convergence of CAPTURED Fish and People: Examining the Symbiotic Nature of Labor Trafficking and Illegal, Unreported and Unregulated Fishing	Deviant Behavior
2019	Sollund, R.A.	The crimes of wildlife trafficking: Issues of justice, legality and morality	Routledge
2019	The Pangolin Reports	Trafficked to Extinction	The Pangolin Reports
2019	Martínez, I.A., Martínez, E.R.	Trafficking of Totoaba Maw (in Green Crime in Mexico eds. Ines Arroyo-Quiroz, Tanya Wyatt)	Palgrave Studies in Green Criminology
2019	Arroyo-Quiroz, I., Wyatt, T.	Wildlife Trafficking Between the European Union and Mexico	International Journal for Crime, Justice and Social Democracy
2020	Europol	28 Bird Traffickers Netting €1 Million Per Year Arrested in Spain	Europol
2020	Van Uhm, D.P.	Chinese wildlife trafficking networks along the Silk Road	Organized Crime and Corruption across Borders: Exploring the Belt and Road Initiative. London: Routledge.
2020	Wyatt, T., van Uhm, D., Nurse, A.	Differentiating criminal networks in the illegal wildlife trade: organized, corporate and disorganized crime	Trends in Organized Crime

2020	Kamau, R.	Drugs and Trophy Trafficking Couple to Lose Sh1 Billion Worth of Property and Cash (Kenya)	Journal of African Elephants
2020	Interpol, ENACT	Illicit goods trafficking via port and airport facilities in Africa	Interpol, ENACT
2020	UNODC	The Akasha brothers' international drug trafficking network	United Nations Office on Drugs and Crime
2020	van Uhm, D.	The convergence of environmental crime with other serious crimes: subtypes within the environmental crime continuum	European Journal of Criminology
2020	Nožina, M.	The Czech Rhino Connection: a Case Study of Vietnamese Wildlife Trafficking Networks' Operations Across Central Europe	European Journal on Criminal Policy and Research

Document S1: Information Letter

Title of Project: The Illegal Wildlife Trade and Converging Criminal Networks

To help you make an informed decision regarding your participation, this letter will explain what the study is about, the possible risks and benefits, and your rights as a research participant. If you do not understand something in the letter, please ask one of the investigators prior to consenting to the study. You will be provided with a copy of the information and consent form if you choose to participate in the study.

You are invited to participate in a research study conducted by myself, Michelle Anagnostou, under the supervision of Professor Brent Doberstein from the Department of Geography of the University of Waterloo, Canada. My overarching objective is to understand criminal convergence in the context of the illegal wildlife trade. Understanding how wildlife trafficking relates to other illegal activities may promote a cross-government and multi-agency approach to addressing transnational organised crime. It may contribute to government capacities to adopt a collaborative approach to wildlife crime and recognize wildlife trafficking as a serious and complex issue involving a variety of offences committed throughout its operating network. This knowledge can also assist law enforcement responses by ensuring that resources are targeted most effectively to facilitate investigations and prosecutions. The study is for a PhD thesis.

If you decide to volunteer, you will be asked to complete a one-time 40–60-minute interview. Interview questions focus on your knowledge and experiences on the degree to which wildlife trafficking relates to other serious crimes. Participation in this study is voluntary. You may decline to answer any questions that you do not wish to answer, and you can withdraw your participation at any time by not submitting your responses. You can request your data be removed from the study up until 1st December 2023, as it is not possible to withdraw your data once papers and publications have been submitted to publishers. There are no known or anticipated risks from participating in this study.

We may share the names of organizations that participated in the study in the final research report. However, it is important for you to know that your identity will be confidential. The information you share will be kept confidential by assigning an ID code so that individual names are not associated with the data. All of the data will be summarized/aggregated, and no individual could be identified from these summarized results. We will not use or save this information without your consent. The data, with no personal identifiers, collected from this study will be maintained on a password-protected computer database in a restricted access area of the university. As well, the data will be electronically archived after completion of the study and maintained for at least two years and then erased.

This PhD research has been funded by the Social Sciences and Humanities Research Council (SSHRC) of Canada and graduate scholarships provided by the University of Waterloo. This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Board (REB # 42362). If you have questions for the Board, contact the Office of Research Ethics at 1-519-888-4567 ext. 36005 or reb@uwaterloo.ca. For all other questions about the study, please contact Michelle Anagnostou at managnos@uwaterloo.ca, or Michelle's supervisor, Professor Brent Dobertsein (bdoberst@uwaterloo.ca). Further, if you would like to receive a copy of the results of this study, please contact the investigator. Thank you for considering participation in this study!

Document S2:
Interview Guide on Understanding Illegal Wildlife Trade and Crime Convergence

Date: _____ Time : _____

Interviewee ID: _____ Location: _____

Introduction

Thank you so much for meeting me. I will start by giving you another brief overview of my research and who I am. My name is Michelle Anagnostou, and I am a PhD student from the University of Waterloo in Canada. This is a project for understanding the role of organised criminal groups in wildlife crime and the illegal wildlife trade. My work here may contribute to international anti-trafficking efforts by gathering the knowledge and experiences of practitioners in wildlife trade hotspots. This research may inform efforts to tackle the illegal wildlife trade as a cross-sectoral policy issue.

I know you are really busy, and I sincerely appreciate your time. This should take about 45 minutes to an hour. Would you mind if I audio record this meeting so that I can make sure that I don't miss anything important that you tell me? (Get verbal consent- if interviewee objects to being recorded, do not record the meeting). Despite being taped, I would like to assure you that the transcribed notes will contain no information that would link you to specific statements. Your identity will remain confidential. I would also like to remind you that you should not feel obliged to answer every question.

Please let me know at any point if you would like to skip any questions that you do not wish to answer, stop participating altogether, and/or withdraw your data from the study.

- Do you have any questions or concerns so far? (Pause here to give enough time to think).
- Do you agree to the use of anonymous quotations in any thesis or publication that comes from this research? [Make note in consent log].

Okay great! Let's get started:

To make sure we are on the same page, when I say "convergence" you may also think of it as overlapping or crossover crimes, "crime symbiosis," or cross or poly-commodity trafficking. After reviewing the literature, we have attempted to categorize the types of convergences that can occur, including:

- Taxation of wildlife traffickers by other organised crime groups
- Same individual smugglers, networks, brokers and corrupt officials, moving shipments of both wildlife and other contraband

- Shared routes, techniques, modus-operandi
- Wildlife used to conceal other illicit commodities, and vice versa
- Wildlife traded as a currency for other illicit commodities with other crime networks
- Redirected focus of crime groups into wildlife from other products due to low risk and consequences if caught
- Wildlife trade facilitated by forced or bonded labour of trafficked people

So, all of these things are what we consider to be convergence. Does that make sense? (If not, offer clarification before continuing).

Interview Questions

Section 1: Overview of Participant's Role

1.1 What is your current job title/position?

1.2 How long have you worked in this position?

1.3 Can you list the main duties and responsibilities of your job?

Section 2: Overview of Illegal Wildlife Trade in Jurisdiction

2.1 What wildlife species and products do you see as commonly illegally traded? Which do you think are of biggest concern?

2.2 How would you characterise the structure of wildlife trafficking networks in [your country]? (e.g., Do you think they are like a mafia with a big boss at the top and a strict hierarchy, or actors that are more loosely connected, with little hierarchy, more opportunistic, etc.)

2.3 In terms of composition, do you think they are mostly native-born or foreign actors leading wildlife trafficking networks in [your country]?

2.4 Do wildlife traffickers in [your country] ever use violent behaviours, such as intimidating or causing actual physical harm to officers, potential witnesses, and/or rivals? (very rarely, occasionally, or frequently).

Section 3: Perspectives on Convergence

3.1 I am going to show you a list 16 types of serious and transnational organised crimes. Based on your knowledge and experiences, can you indicate which of the following crime types

converge with animal trafficking? Please let me know if you are unsure what any of these terms mean.

[Refer to separately attached list. For each "Yes," ask the following follow up questions as relevant]:

3.11 Can you please explain why you said "yes"?

3.12 Is this a rare, or isolated incident?

3.13 [if isolated incident] When did this happen?

[If not isolated incident] In your opinion, how often does this convergence occur? (Is it rare in the sense that most wildlife traffickers are specialised in just wildlife, or do you think this type of diversification is the norm?)

3.14 Which species or wildlife product was/is involved?

3.15 Can you describe the nature of these convergences?

3.2 Can you think of any other crimes (not on that list) that you know have been committed alongside wildlife trafficking?

3.3 How do you think the nature of convergence differs depending on the type of wildlife being traded?

3.4 Researchers are increasingly interested in the gender dimensions of wildlife crime. What do you think is the role of women in these converging wildlife trade networks?

3.5 Have you noticed any trends in how organised illegal wildlife trade is changing over time? How do you think COVID-19 has impacted how wildlife trafficking relates to other transnational organised crime?

Responding to Wildlife Trafficking Networks

4.1 How effectively do you think [your country] is responding to curb this threat?

4.2 Are courts able to effectively pass judgements against wildlife crime defendants? Are the penalties adequate to deter the crime?

4.3 What do you think is the role of corruption in facilitating wildlife trafficking in [your country]? And where are the main vulnerabilities (e.g., police, customs, rangers, CITES permits)?

4.4 Do you think [your country] has effective mechanisms for information sharing among relevant agencies?

4.5 How do you think responses to counter wildlife trafficking can be improved? If you could wave a magic wand, what would you like to see done differently?

4.6 Do you think there are any major gaps in our legal framework that 1) make it very difficult for you to do your job, or 2: are easily exploited by criminals?

4.7 Is there anything else you would like to add?

Conclusion

Thank you for the time and information that you have shared with me today! This has been a very interesting meeting, and your opinions will be really valuable. Once again, I would like to remind you that your identity will be kept confidential.

Before I go, do you have any questions on anything that we have discussed? (Pause here to give enough time to think and comment). Can I give you my full contact information in case you think of anything else you would like to follow up on, or any more information that may be helpful for the project? (Hand over business card).

Now that you have an understanding of our project aims, I wonder if you might know of any other people that I should chat with. (Pause here to give enough time to think and comment). I would be very grateful if you could provide them with my phone number/ e-mail address to get in touch.