

Fighting Back from the Brink: International Efforts to Prevent Illegal Trafficking in Endangered Species

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PART I: INTRODUCTION TO WILDLIFE TRAFFICKING	68
PART II: ILLEGAL WILDLIFE TRAFFICKING ROUTES.....	74
PART III: THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (“CITES”).....	77
A. The Structure and Administration of CITES.....	77
B. Limitations of CITES	80
C. Efforts to Strengthen Member State Legislation and Enforcement	83
PART IV: LAWS AND LAW ENFORCEMENT EFFORTS AROUND THE GLOBE.....	84
A. International Enforcement Efforts.....	85
i. International Consortium on Combating Wildlife Crime (ICCWC).....	85
ii. INTERPOL	87
B. Domestic Enforcement Efforts.	91
PART V: THE ARGUMENT FOR SUSTAINABLE HARVESTING.....	99
A. The Peruvian Vicuña (Vicugna Vicugnanotices):	103
B. American Alligator (Alligator mississippiensis):	105
C. Benefits of Sustainable Harvest Trade	109
D. Criticisms of Sustainable Harvest Trade	110
E. Designing a Successful Sustainable Harvest Program	112
i. Science-Based Standards	113
ii. Monitoring and Enforcement.....	114
iii. Community Engagement	114
iv. Investment of Profits in Conservation	116
v. Reservations.....	117
PART VI: CONCLUSION	117

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PART I: INTRODUCTION TO WILDLIFE TRAFFICKING

“Up to 1 million of the estimated 8 million plant and animal species on Earth are at risk of extinction, many of them within decades,” according to the comprehensive *Global Assessment Report on Biodiversity and Ecosystem Services* report issued in 2019.¹ This report reflects the findings of over 15,000 scientific and government studies.² Human activity and expansion is putting worldwide biodiversity at a significant risk.³ There are many human activities that contribute to this epoch of extinction, such as deforestation, air and water pollution, and global warming. For example, the removal of natural resources from one country for consumer use in another part of the world, termed “telecoupling,” is a significant source of deforestation (*i.e.* deforestation in the Amazon via lumber corporations) and air and water pollution (*i.e.* strip mining and other forms of stripping resources).⁴ Such international trade renders it more difficult for a single community, country, or even continent to stem the catastrophic losses of their plant and animal resources when they occur.⁵ In response, many nations have passed telecoupling laws and regulations to prohibit the killing, capturing, and export of various species of their fauna and flora.

Violation of these telecoupling laws is commonly known as wildlife crime or wildlife trafficking. Wildlife crime is defined as actions taken in regard to flora and fauna in violation of laws and regulations intended to protect or manage these natural resources.⁶ Common types of wildlife crime are the killing, capturing, and trafficking of protected species, more commonly known as poaching.⁷ At the international level, wildlife crime may include violation of international treaties such as the *Convention on International Trade in Endangered Species of Wild*

¹ See Media Release, IPBES, Nature’s Dangerous Decline ‘Unprecedented’: Species Extinction Rates ‘Accelerating’ <https://www.ipbes.net/news/Media-Release-Global-Assessment> (last visited July 10, 2019); Bill Chappell & Nathan Rott, *1 Million Animal And Plant Species Are At Risk Of Extinction, U.N. Report Says*, NPR, May 7, 2019, <https://www.npr.org/2019/05/06/720654249/1-million-animal-and-plant-species-face-extinction-risk-u-n-report-says/>.

² See Seth Borenstein, *UN Report: Humans Accelerating Extinction of Other Species*, U.S. NEWS & WORLD REPORTS, May 7, 2019, <https://www.usnews.com/news/news/articles/2019-05-06/united-nations-to-offer-first-report-on-global-biodiversity> (Study assembled by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)).

³ See *id.*

⁴ See *id.*; Chappell, *supra* note 1.

⁵ See *id.*

⁶ See *Wildlife Crime*, CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA, <https://cites.org/prog/iccwc.php/Wildlife-Crime> (last visited July 10, 2019) (defining wildlife crime) [hereinafter *Wildlife Crime*].

⁷ See generally United Nations Office on Drugs and Crime, *World Wildlife Crime Report: Trafficking in Protected Species*, ¶ U.N. Sales No. E.16.SI.9 (May 2016) [hereinafter *Crime Report*].

Fauna and Flora (“CITES”) as well as violation of the domestic laws of countries in which any stage of the wildlife crime occurred.⁸

As noted by the United Nations (“U.N.”), “poaching often takes place in remote areas of some of the poorest countries in the world, countries with limited capacity to protect wildlife.”⁹ Indeed, many once vibrant and abundant ecosystems now experience the “empty forest syndrome,” which as the name implies, are forested areas devoid of their traditional biodiversity.¹⁰ Such empty forests may ecologically implode due to destruction of the natural balance, in which the flora requires the fauna to survive and the fauna requires the flora for the same.¹¹ The illegal wildlife trade is a major contributor to the empty forest syndrome and the global loss of biodiversity.¹² Nearly 7,000 different species have been counted during recent raids and seizures of illegal wildlife trafficking rings.¹³ Wildlife is trafficked for a variety of purposes, including live captures for individuals, zoos, and breeders; skins, fur, and horns used in medicines, decorations, fashion and jewelry; meats used for both sustenance and commercial trade, even fine dining; logs used in furniture, and much more.¹⁴

Like many crimes, wildlife trafficking has significant social ramifications. Local communities are stripped of vital natural resources used for food, clothing, medicines, and tourism.¹⁵ These communities suffer from both cultural and economic losses as their resources are depleted and ecosystems threatened. Many of the “range countries” (countries from which native wildlife is taken and trafficked) often lack economic resources to fund anti-poaching efforts, such as training and equipping sufficient numbers of law enforcement officers to protect wildlife.¹⁶ Sufficiently staffing law enforcement needs is especially challenging when many areas of poaching are remote and isolated.¹⁷ It becomes a David versus Goliath situation of local communities versus well-funded and highly-organized criminals.

⁸ See generally Convention on the International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087 (stating that wildlife crime(s) may violate the treaty and/or domestic law(s) of countries.) [hereinafter 27 U.S.T. 1087].

⁹ See Crime Report, *supra* note 7, at 96.

¹⁰ See RACHEL LOVE NUWER, POACHED: INSIDE THE DARK WORLD OF WILDLIFE TRAFFICKING 5 (Da Capo Press 2018); Ellen McDonald, *Too Big to Fail: Rescuing the African Elephant*, 40 Fletcher F. of World Aff. 113 (2016) (defining Empty Forest Syndrome as a condition in which animals disappear at much faster rates than their habitats).

¹¹ McDonald, *supra* note 10.

¹² See generally Crime Report, *supra* note 7.

¹³ See *id.*

¹⁴ *Id.*

¹⁵ See *Wildlife Crime*, *supra* note 6; International Consortium on Combating Wildlife Crime (ICWC), Strategic Programme 2016-2020 (July 2016) [hereinafter *Strategic Programme*].

¹⁶ See McDonald, *supra* note 10.

¹⁷ See *id.*

There are also international social harms caused by wildlife trafficking. Cross-border wildlife trade can accelerate the cross-border spread of diseases, such as Ebola and bird flu.¹⁸ Trafficked species may become invasive species which wreak havoc on the foreign ecosystems where they are introduced, such as occurred in the Florida Everglades.¹⁹ Research indicates that illegal trade in natural resources often funds political and military insurgencies.²⁰ As summarized by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, humans “are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide.”²¹

Criminal activities arising from wildlife offenses can include the poaching, killing, selling, concealing, storing, transporting, and using the wildlife products, as well as ancillary crimes of armed violence (often tied with armed conflict and terrorism), money laundering, document forgery or falsification, and corruption.²² Despite its extensive ecological, social, and criminal impacts, there is limited public awareness of wildlife trafficking and limited treatment of wildlife trafficking as a serious crime by law enforcement officials, prosecutors, and judicial systems.²³ Law enforcement efforts to battle wildlife trafficking have historically been a low priority resulting in lack of adequate funding, training, and data collection.²⁴ As a result, wildlife crime carries a very low-risk of prosecution and even lower risk of significant sanctions.²⁵ Yet, the U.N. estimates that the revenue generated by wildlife crime is in the tens of billions of dollars.²⁶ Similarly, Europol, a preeminent law enforcement body of the European Union, found that three of the twelve most lucrative international criminal activities

¹⁸ E.g., N. Peter O’Leary, *Cock-A-Doodle-Do: Pandemic Avian Influenza and the Legal Preparation and Consequences of an H5N1 Influenza Outbreak*, 16 Health Matrix J.L.- Med. 511, 546 (2006); Pamela Jo Hatley, *Feral Cat Colonies in Florida: The Fur and Feathers are Flying*, 18 J. Land Use & Env. L. 441 (2003).

¹⁹ See *Wildlife Crime*, supra note 6; Jane Cynthia Graham, *Snakes on a Plain, or in a Wetland: Fighting Back Invasive Nonnative Animals - Proposing a Federal Comprehensive Invasive Nonnative Animal Species Statute*, 25 Tulane Env. L.J. 19, 75-78 (2011).

²⁰ *Wildlife Crime*, supra note 6.

²¹ Attributed to Sir Robert Watson, chair of the IPBES. See Darryl Fears, *One Million Species Face Extinction, U.N. Report Says. And Humans Will Suffer as a Result*, THE WASHINGTON POST (May 6, 2019), https://www.washingtonpost.com/climate-environment/2019/05/06/one-million-species-face-extinction-un-panel-says-humans-will-suffer-result/?utm_term=.dd8c5371267f.

²² See *Corruption and Wildlife Crime*, United Nations Office on Drugs and Crime, <https://www.unodc.org/unodc/en/corruption/wildlife-and-forest-crime.html> (last visited July 11, 2019)[hereinafter *Corruption and Wildlife Crime*]; see McDonald, supra note 8.

²³ See Intelligence Project on Environmental Crime, *Report on Environmental Crime in Europe*, (February 20, 2015)[hereinafter *Intelligence Project*]; *Corruption and Wildlife Crime*, supra note 19.

²⁴ See *Corruption and Wildlife Crime*, supra note 22.

²⁵ See *Intelligence Project*, supra note 23, at 14.

²⁶ See *Wildlife and Forest Crime: Frequently Asked Questions*, United Nations Office on Drugs and Crime, <https://www.unodc.org/unodc/en/wildlife-and-forest-crime/faq.html> (last visited June 11, 2019)[hereinafter *Wildlife and Forest Crime*].

involved wildlife trafficking (and range from an estimated annual value of 4.2 billion to 10 billion U.S. dollars per year.)²⁷

Inevitably, the low-risk to high-profit ratio of wildlife trafficking has attracted international organized criminal enterprises.²⁸ Organized crime is defined by the *U.N. Convention Against Transnational Organized Crime* as a group of three or more persons, acting in concert to commit crimes in order to obtain financial or material benefit.²⁹ International wildlife trafficking almost always meets this definition due to the multiple actors necessary to capture, kill, or harvest the wildlife; transport it within the range country; export it from that range country; couriers to move the wildlife to international hubs and final sales destinations; destination point commercial distributors; and, finally, the end purchaser.³⁰ These actors obtain financial benefits in the form of payment for their role in the wildlife trafficking.³¹

However, wildlife crime has yet to be viewed, monitored, or enforced internationally as a serious criminal problem, like narcotics or human trafficking.³² In many ways, wildlife crime is treated as a victimless crime, because there is not often a direct human victim.³³ In fact, in many communities, wildlife crime is an open secret and basis for economic prosperity.³⁴ Furthermore, unlike other international crimes, most wildlife trafficking has legal markets in which to hide the illegal products. Illegal traffickers can blend the illegally obtained wildlife with the legally traded wildlife to “launder” it, making identification and prosecution of illegally sourced wildlife challenging.³⁵

Even in countries where wildlife trafficking is treated as a serious offense, law enforcement often still faces many hurdles, including lack of funding, equipment and training, community support, sufficient modern crime-fighting equipment, and government corruption, to name a few.³⁶ Law enforcement officers in the

²⁷ See *Environmental Crime*, Europol, <https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/environmental-crime> (last visited June 11, 2019).

²⁸ See *Illicit Trafficking in Endangered Animal Species*, Europol, <https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/environmental-crime/illicit-trafficking-in-endangered-animal-species> (Profits in the European Union alone were estimated to equal 4.4 billion euros in 2011) (last visited Nov. 3, 2019).

²⁹ See The United Nations Convention Against Transnational Organized Crime and the Protocols Thereto, Nov. 15, 2000, U.N. Res. 55/25 (defining organized crime 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.”).

³⁰ USAID, USAID RESEARCH STUDY ON CONSUMER DEMAND FOR ELEPHANT, RHINO AND PANGOLIN PARTS AND PRODUCTS IN VIETNAM (Nov. 21, 2018) [hereinafter USAID VIETNAM].

³¹ See *id.*

³² See *Wildlife Crime*, *supra* note 6; see also *Wildlife and Forest Crime*, *supra* note 26.

³³ See *Wildlife Crime*, *supra* note 6.

³⁴ See NUWER, *supra* note 10, at 207-08.

³⁵ See generally Crime Report, *supra* note 7.

³⁶ *Wildlife Crime*, *supra* note 6; *Wildlife and Forest Crime*, *supra* note 26.

range countries, often called “rangers,” serve in extremely dangerous environments, facing threats from poachers and from some wildlife, with little financial support, insurance, or death benefits.³⁷ Similarly, customs agents, the backbone to halting international flow of illegal trade, need technical training and equipment to adequately detect illegal imports and exports.³⁸ Legislatively, international laws, like CITES, have very limited enforcement tools and must rely on domestic legislation for enforcement mechanisms. However, many national laws fail to adequately address the need for serious criminal prosecutions and sentences to discourage wildlife crime. Those countries which do have strong wildlife laws often limit the reach of those laws to the species of concern within that county, without regard to international trafficking of wildlife from other range countries.³⁹

Recognizing the severity of wildlife crime, its international nature, and the threat it poses to the very existence of many iconic species (and thousands of lesser-known species), countries around the world and international organizations have pooled their financial and technical resources to combat international wildlife trade in an organized and transnational fashion, including the International Consortium on Combating Wildlife Crime (“ICWC”), Interpol, Europol and its Environmental Crime Network, the South Asia Wildlife Enforcement Network (“SAWEN”), and the Association of Southeast Asian Nations (“ASEAN”) Wildlife Law Enforcement Network.⁴⁰ These organizations have pooled international resources, such as technical tools, law enforcement techniques, and financing, to implement law enforcement actions across dozens of countries which have resulted in hundreds of arrests and seizures of thousands of live species of flora and fauna as well as carcasses and parts of wildlife. However, illegal wildlife trade is so well organized and entrenched, stretching from the poorest and most remote communities to the wealthiest denizens of cosmopolitan cities, that thousands of endangered species continue to be captured and killed every year.⁴¹

As described further in this article, decades of bans on trade in wildlife species has resulted in only moderate success in protecting vulnerable wildlife. Unfortunately, by the time law enforcement implements a sting operation to

³⁷ See NUWER, *supra* note 10, at 207-08.

³⁸ See World Customs Organization, Declaration of the Customs Co-Operation Council on the Illegal Wildlife Trade (June 2014).

³⁹ See *Wildlife and Forest Crime*, *supra* note 26.

⁴⁰ See *Strategic Programme*, *supra* note 15, at 2; *Environmental Crime*, EUROPOL, <https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/environmental-crime> (last visited June 12, 2019); SOUTH ASIA WILDLIFE ENFORCEMENT NETWORK, <https://www.sawen.org> (last visited June 23, 2019); Press Release, Association of Southeast Asian Nations, ASEAN Statement on Launching of the ASEAN Wildlife Law Enforcement Network (Dec. 1, 2005) (on file with author).

⁴¹ See NUWER, *supra* note 10, at 169 (stating that there is no reliable data on the extent of legal trade worldwide because many countries do not report their wildlife trade numbers).

recover poached wildlife, the plants, animals, birds, or reptiles have already been poached and are mostly dead or dying (as transport conditions tend to be horrific and leave the wildlife sick and injured, including birds shoved into soda bottles and hundreds of lizards crammed into lightless boxes).⁴² Further, the law enforcement seizures, typically including thousands of dead and dying wildlife species and parts, resulting from such stings demonstrate that illegal wildlife trade is slaughtering thousands upon thousands of species every year, and these are only the results of traffickers who have been caught. The amount of species trafficked through illegal operations which are not caught in a law enforcement sting is likely much higher.

After decades of limited success, a different approach is warranted, an approach which allows sustainable farming and harvesting of endangered species to generate funds to fight illegal trafficking, develop infrastructure for conservation, and encourage local communities to protect their resources.

The legal trade resulting from farming and harvesting activities can put economic revenue directly into the hands of local farmers and communities, allowing them to benefit from, and value the continued survival of, local flora and fauna. This converts local communities from potential poachers into wildlife protectors.⁴³ Such revenue can be extensive. For example, it is estimated that the rhino horn trade could net millions of dollars per year for ranchers.⁴⁴ The surgical removal of rhino horns (which grow back after three years) has the ecological benefit of rendering these animals less valuable to poachers⁴⁵ (who simply kill the rhinos to remove their horns). Funds earned from the sale of this valuable, and sustainable, commodity can be reinvested in hiring, training, and equipping rangers to protect rhinos.⁴⁶ In addition, an excess of horns on the market may reduce their perceived rarity and thereby reduce demand and prices, rendering poaching less profitable to organized crime. This beneficial cycle can be applied to many different endangered species, including rhinoceros, lions, and many others.

Wildlife crime pushes endangered and vulnerable species toward extinction. It threatens entire ecosystems and the communities which depend on them.⁴⁷ It presents a transnational environmental, societal, and criminal problem which international authorities have failed to stop. So long as wildlife trafficking continues to provide billions of dollars in profit to organized crime, and law

⁴² See Katarzyna Nowak, *The World Has a Chance to Make the Wild Animal Trade More Humane*, NAT'L GEOGRAPHIC (Feb. 26, 2016), <https://www.nationalgeographic.com/news/2016/02/160226-animal-trade-animal-welfare-exotic-pets-cites-wildlife-trafficking/>.

⁴³ See CITES, *CITES and Vicuñas - A Conservation Journey*, YOUTUBE (Mar. 11, 2013), <https://www.youtube.com/watch?v=ROnMnfBDUQ4> [hereinafter *A Conservation Journey*].

⁴⁴ See NUWER, *supra* note 10, at 39.

⁴⁵ See *id.*

⁴⁶ See NUWER, *supra* note 10, at 207-08.

⁴⁷ *Intelligence Project*, *supra* note 23, at 1, 24-26.

enforcement officers continue to lack interest in fighting this type of crime or continue to be overwhelmed by lack of sufficient training, resources, personal, and technical tools, the rampant killing will continue until many of these species are gone forever.

The debate regarding sustainable harvesting of endangered species, particularly hunting for trophy, meat, or parts, is quite vocal. Proponents point to examples of successful population rebounds of specific species, such as African lions, as evidence that sustainable harvesting, even hunting, helps wildlife populations and local communities.⁴⁸ Opponents tend to disregard numerous examples of successful sustainable programs and focus on the ethics of using products from and/or killing an endangered animal.⁴⁹

This article advances the argument for sustainable harvesting as a broad supplement, even replacement, to the prevailing no-trade policies currently used in many countries and international organizations. It is the author's premise that the no-trade conservation paradigm is failing to adequately prevent illegal trafficking and endangered wildlife populations are suffering catastrophic losses as a result. This article will explain the current state of prevailing no-trade regulations and efforts to stem the onslaught of illegal wildlife trafficking. The article will then explore two examples of successful sustainable farming and harvesting programs, the American alligator and the Peruvian vicuñas. After a comparison of the benefits and drawbacks of sustainability programs, this article will provide a detailed list of critical elements for development of a successful sustainability program. These guidelines can be modified for the specific needs of a range country or endangered species.

PART II: ILLEGAL WILDLIFE TRAFFICKING ROUTES

What types of wildlife are traded? Just about everything. Animals and plants are traded dead and alive, in whole and in parts. The most significantly trafficked species and parts worldwide include rosewood and agarwood logs, elephant tusks and hair, assorted reptiles (most particularly crocodiles), pangolins, rhinoceros, and marine turtles.⁵⁰ However, mammals (most popularly elephants, seals, and big cats), plants (particularly trees used for timber), birds, and aquatic creatures (with emphasis on corals, eels and caviar) are all heavily traded.⁵¹

While there is an extensive variety of trade across the globe (complicated by the fact that some countries serve only as transit hubs rather than destination

⁴⁸ Enrico Di Minin, et al., *Banning Trophy Hunting Will Exacerbate Biodiversity Loss*, 31 TRENDS IN ECOLOGY & EVOLUTION 99, 100 (Feb. 2016).

⁴⁹ See NUWER, *supra* note 10, at 258.

⁵⁰ See *Crime Report*, *supra* note 7 at XI.9 3, 9, 13, 16, 42 fig. 3 (May 2016).

⁵¹ See WILLOW OUTHWAITE & LAUREN BROWN, *EASTWARD BOUND: ANALYSIS OF CITES-LISTED FLORA AND FAUNA EXPORTS FROM AFRICA AND EAST AND SOUTHEAST ASIA* 1, 71, 117 (Traffic International 2018) (Mar. 2018).

points for various species) certain species are more heavily traded in certain geographic regions.⁵² The prevalence of certain types of traded wildlife in certain parts of the world necessarily directs the tactics and tools used by law enforcement to combat such trafficking. For example, birds are heavily traded in Central and South America, mammals in Africa and Asia, reptiles in Europe and North American, and corals in coastal areas.⁵³ These trade routes often follow the same international paths as other criminal activities, such as tax evasion or money laundering.⁵⁴

There is significant trade, both legal and illegal, in protected species between African and Asian countries.⁵⁵ Most of this trade is the export of live animals and plants, as well as skins, meat, and logs from African range countries to Asian market destinations.⁵⁶ There are a significant and diverse variety of species being traded between Africa and Asia. Between 2006 and 2015, legal trade between Africa and Asia included almost 1,000 different taxa, as well as variety in the countries of origin.⁵⁷ Despite international focus on trade in certain celebrated mammals, like rhinos and elephants, reptiles are actually the most commonly traded class with commercial demand including meat, skins, and live trade, particularly the Nile crocodile and the leopard tortoise.⁵⁸

China presents the greatest international market for a variety of traded species.⁵⁹ It is the world's most significant importer of rosewood for furniture (sourced primarily from India, Mexico, and Madagascar), elephant ivory for gifts, jewelry, and decorations (sourced from various counties in sub-Saharan Africa), and pangolins for meat and scales (sourced from southeast Asian countries).⁶⁰ There are concerns that as China's gross domestic product and levels of individual prosperity rise, the demand for trafficked wood, ivory, and pangolin scales will continue to grow and push these endangered species into extinction.⁶¹ In a fortunate and encouraging policy turn, China banned all trade in elephant ivory in 2017.⁶²

⁵² See Europe, a Silent Hub of Illegal Wildlife Trade, D.W.com, <https://www.dw.com/en/europe-a-silent-hub-of-illegal-wildlife-trade/a-37183459> (last visited Nov. 26, 2019).

⁵³ See *Crime Report*, *supra* note 7 at XI.9, at 13, fig. 1 (May 2016).

⁵⁴ See *id.* at 71.

⁵⁵ See OUTHWAITE & BROWN, *supra* note 51, at 1.

⁵⁶ See *id.*

⁵⁷ See *id.* at 9.

⁵⁸ See *id.* at 20.

⁵⁹ See USAID, Research Study on Consumer Demand for Elephant, Pangolin, Rhino and Tiger Parts and Products in China (June 12, 2018) [hereinafter USAID China].

⁶⁰ See *id.*

⁶¹ See NUWER, *supra* note 10, at 207-08.

⁶² See Rachael Bale, *In China, Ivory Seems to Be Losing Appeal*, NATIONAL GEOGRAPHIC (Sept. 28, 2018), <https://www.nationalgeographic.com/animals/2018/09/wildlife-watch-news-ivory-demand-reduction-china-ban/>.

As in China, trade throughout Asia tends to be driven by consumer demand for gifting, status displays, and belief that parts of certain animals, such as the horns of elephants and rhinos, the meat of tigers, and the meat and scales of pangolins, bring health benefits, protection, and good fortune.⁶³ Japan, once a significant destination importer of elephant ivory, is now a significant trade hub for sales of elephant ivory to China and other East Asian markets.⁶⁴

However, it is important to recognize that Asia is composed of 48 countries and Africa is composed of 54 countries. Not all countries in either continent engage in legal or illegal wildlife trade. Nor do all countries export and import the same species. However, the Africa to Asia trade route is one of the strongest legal and illegal trading conduits on the globe.⁶⁵ As such, African and Asian countries are subject to a great amount of pressure to address illegal wildlife trade. The laws, policies, and enforcement efforts of high trade countries in these two continents are analyzed in detail in Part IV.

African and Asian countries are far from the only nations dealing with the problems of illegal wildlife trade. Seizures of illegally trafficked wildlife have been made in 120 countries across the globe.⁶⁶ Over 80 different nationalities have been identified in wildlife trafficking operations.⁶⁷

America, Russia, and the United Kingdom, as well as dozens of other countries, are significant importers of both legal and illegal trade.⁶⁸ For example, the U.S. is a major destination for illegally trafficked leopard skins from Asia and Africa, agarwood (used in cosmetics and perfumes), caviar from Russia, and a significant importer and exporter of reptiles.⁶⁹ Russia has been a hub of smuggling for tigers and leopards.⁷⁰ The United Kingdom was the site of a seizure of over 50,000 illegally trafficked items in a 2015 sting.⁷¹

While certain countries can be identified as significant importers or exporters of certain species, and certain countries bear the greatest loss of biodiversity and community resources through wildlife export, illegal wildlife trade is a worldwide problem with regard to both supply and demand. As such, it requires a worldwide response.

⁶³ See USAID VIETNAM, *supra* note 30 at 9, 137.

⁶⁴ See Tomomi Kitade & Ryoko Nishino, *Ivory Towers: An Assessment of Japan's Ivory Trade and Domestic Market*, (TRAFFIC, Dec. 2017).

⁶⁵ See Symposium Report, *Africa-Asia Pacific Symposium on Strengthening Legal Frameworks to Combat Wildlife Crime*, 57 (2017).

⁶⁶ See *Crime Report*, *supra* note 7, at 1 (May 2016).

⁶⁷ See *id.*

⁶⁸ See NUWER, *supra* note 10.

⁶⁹ See *id.* at 15, 49, 57, 59, 83.

⁷⁰ See *Russia Sets Tougher Penalties for Trafficking Endangered Animals*, WWF, (June 23, 2013), <https://wwf.panda.org/?209156/Russia-sets-tougher-penalties-for-trafficking-endangered-animals>.

⁷¹ Joint Press Release, CITES et al., Successful Operation Highlights Growing International Cooperation to Combat Wildlife Crime (Jun. 18, 2015) (on file with author).

PART III: THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED
SPECIES OF WILD FAUNA AND FLORA (“CITES”)

A. The Structure and Administration of CITES.

While any country could, and many do, enact legislation to combat illegal wildlife trade, over 183 countries have joined the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* to be part of an international framework designed to protect wildlife from illegal trade.⁷² Better known as CITES (pronounced “site-ease”) this agreement is the preeminent international treaty for the protection of threatened and endangered species.⁷³ Enacted in 1973 in Washington D.C., and amended multiple times since then, CITES includes a current membership of several key countries in the illegal wildlife trade routes, including the United States, South Africa, Madagascar, the Democratic Republic of the Congo, the United Kingdom, Malaysia, Kenya, Indonesia, Japan, China, Thailand, Congo, and Vietnam.⁷⁴ Major decisions regarding the treaty are made by a governing body known as the Conference of the Parties which meets every two or three years.⁷⁵ Tasks of the Conference of the Parties, particularly those requiring specialized knowledge, are often delegated to the Plants Committee, the Animal Committee, or a Standing Committee, most of which meet twice between meetings of the Conference of the Parties.⁷⁶ Daily operations are run through the CITES Secretariat, located in Geneva, Switzerland, who is provided by the Executive Director of the United Nations Environment Programme.⁷⁷ The Secretariat’s tasks include: undertaking scientific and technological studies, seeking information from the treaty members, preparing annual reports and other documents, and making recommendations as to how to advance the goals of the treaty.⁷⁸

CITES regulates trade among member states in designated wild plants and animals species (live, dead, and the parts thereof) which are, or may become, threatened due to excessive commercial exploitation.⁷⁹ Lists of the species

⁷² See *List of Parties to the Convention*, CITES, <https://cites.org/eng/disc/parties/index.php> (last visited July 13, 2019).

⁷³ See 27 U.S.T. 1087, *supra* note 8.

⁷⁴ See generally *List of Contracting Parties*, CITES, <https://cites.org/eng/disc/parties/chronolo.php> (last visited July 13, 2019).

⁷⁵ See 27 U.S.T. 1087, *supra* note 8 at art. XI; *Conference of the Parties*, CITES, <https://www.cites.org/eng/disc/cop.php> (last visited June 30, 2019); *The Structure of CITES*, CITES, <https://cites.org/eng/disc/org.php> (last visited June 30, 2019).

⁷⁶ See *Animals and Plants Committees*, CITES, https://www.cites.org/eng/disc/ac_pc.php (last visited June 30, 2019); *The Structure of CITES*, CITES, <https://cites.org/eng/disc/org.php> (last visited June 30, 2019) [hereinafter CITES Structure].

⁷⁷ See 27 U.S.T. 1087, *supra* note 8 at art. XXII; CITES Structure, *supra* note 76.

⁷⁸ See 27 U.S.T. 1087, *supra* note 8 at art. XII.

⁷⁹ See *id.* at art. I, III.

designated for various levels of protection are set forth in the critical CITES Appendices.⁸⁰ The crux of CITES is that a species listed as protected in one of the Appendices cannot be traded internationally in any manner which violates the protections established by CITES.⁸¹ This is regulated primarily through the use of import and export permits and certificates.⁸²

To supervise this trade framework, CITES requires that each member nation designate one or more Scientific Authorities to provide guidance to that country's officials on the effect of trade on listed species, as well as one or more Management Authorities to administer the licensing system.⁸³ The Scientific Authority is tasked to monitor exports of species to ensure that such export is in accordance with the protections of Appendices I, II or III.⁸⁴ The Management Authority is also tasked with ensuring the care and return of any living species seized in their country due to illegal trade.⁸⁵

CITES facilitates and directs the manner in which member countries work cooperatively to protect species of concern. This is accomplished through the agreed-upon listing of species for various levels of protection, development of suggested legislative frameworks for member countries to implement, and international political and economic pressure to encourage member nations to fight international wildlife crime within their borders.⁸⁶

Over 35,000 species are protected to various extents under the CITES Appendices.⁸⁷ These species are generally grouped as fauna or flora, then more specifically grouped as mammals, birds, reptiles, amphibians, fish, and invertebrates. Some well-known wildlife protected under CITES include species of: hippopotamus, panda, leopard, dolphin, whale, bat, kangaroo, pangolin, monkey, elephant, manatee, stork, flamingo, hummingbird, parrot, penguin, owl, alligator, crocodile, chameleon, iguana, boa, python, sea turtle, frog, toad, shark, sturgeon, eel, butterfly, mussel, coral, cactus, aloe, and palm.⁸⁸ This is a small listing of wildlife that CITES has deemed in danger of extinction due to human desire to capture, kill, trade, and use them live or in parts, such as meat and fur, or in the form of extracts, powders, liquids, parts, and chips.

The three Appendices are key to CITES purpose. Each appendix identifies certain species designated for protection in accordance with the degree of protection needed for that species.⁸⁹ Determinations of which species will be

⁸⁰ *See id.*

⁸¹ *See id.* at art. II-V.

⁸² *See id.* at art. VI.

⁸³ *See Crime Report, supra* note 7, at 24.

⁸⁴ *See* 27 U.S.T. 1087, *supra* note 8 at art. IV, app. II.

⁸⁵ *See id.* at art. VIII.

⁸⁶ *See generally Crime Report, supra* note 7.

⁸⁷ *See id.* at 3, 13.

⁸⁸ *See* 27 U.S.T. 1087, *supra* note 8 at app. I, II, & III.

⁸⁹ *See id.*

placed on which Appendix, and any transfer of a species onto Appendix I or II, are made by a two-thirds vote of present and voting members of the Conference of the Parties.⁹⁰ A request to move a species from the protection of Appendix I to Appendix II, or vice-versa, may be presented by any member country but must be approved by a two-thirds vote of the members present and voting.⁹¹ While the Conference of the Parties should base its determination of the level of protection needed by a species on biological needs and trade standards, political considerations do come into play.⁹²

Appendix I lists the “species threatened with extinction which are or may be affected by trade” including panthers, rhinoceros, and gorillas.⁹³ Species listed on Appendix I may only be traded by permit and such permit should only be issued in exceptional circumstances.⁹⁴

Species listed on Appendix II theoretically face a lesser degree of extinction but are still threatened and may become more threatened due to trade.⁹⁵ Those which are less close to extinction include certain species of zebra, hippopotamus, and elephants. Therefore, Appendix II should include species “which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation . . .”⁹⁶

Finally, species listed on Appendix III are those “which any Party identifies as being subject to regulation within its jurisdiction for the purposes of preventing and restricting exploitation and as needing the co-operation of other Parties in the control of trade.”⁹⁷ These species, such as geckos, cobras, and turtles, are deemed to have the least risk of extinction so trade is allowed but, in order to prevent exploitation, an export permit will usually be required for international trade.⁹⁸ Typically, a species is listed in Appendix III because it is protected by the laws of at least one member country and that country seeks CITES assistance in controlling trade of the species to countries where it is not protected.⁹⁹ Listing on Appendix III is accomplished by submitting such designation to the Secretariat, who will thereafter publish it to the other treaty members.¹⁰⁰

⁹⁰ *See id.* at art. XI.

⁹¹ *See id.* at art. XV.

⁹² *See Crime Report, supra* note 7, at 24.

⁹³ *See* 27 U.S.T. 1087, *supra* note 8, at art. II.

⁹⁴ *See id.*

⁹⁵ *See id.*

⁹⁶ *See id.*

⁹⁷ *See id.*

⁹⁸ *See* 27 U.S.T. 1087, *supra* note 8, at art. XXII.

⁹⁹ *See* OUTHWAITE & BROWN, *supra* note 51.

¹⁰⁰ *See* 27 U.S.T. 1087, *supra* note 8 at art. XVI, app. III.

B. Limitations of CITES

Unfortunately, CITES has a number of impediments to successfully achieving an end to illegal wildlife trade. First, CITES is a trade treaty, not a law enforcement treaty, and thus its enforcement authority is restricted to trade sanctions.¹⁰¹ In fact, most CITES protections deal with whether permits to trade the species will, or will not, be granted.¹⁰² Enforcement mechanisms are trade-based, such as the seizure of illegally traded specimens and return to their country of origin.¹⁰³

Second, CITES does not attempt to regulate or govern wildlife trade which occurs solely within a member country.¹⁰⁴ Domestic hunting, capturing, killing, and trade of wildlife is completely beyond the reach of CITES. It is left to the member nations to enact, or not enact, protective laws within their respective borders. Unfortunately, many member nations have historically lacked sufficient protective legislation.¹⁰⁵ Thus the capture and slaughter of endangered wildlife continues, legally or with minimal penalties, within such countries, so long as the wildlife products are not exported to a CITES member country. A prime example of this problem is the legal killing of critically endangered pangolins in Vietnam for personal use within the country while transport of eight tons of pangolin scales into Vietnam from the Democratic Republic of Congo in 2018 was illegal due to CITES and thus confiscated by law enforcement.¹⁰⁶

Conversely, countries which strive to protect certain species under their domestic laws may not receive the support of the member countries unless that species is also listed in the CITES Appendices. For example, the United States has established domestic protection for many of its threatened and endangered species under the federal Endangered Species Act (“ESA”), including the Asiatic black bear, but those domestic protections do not extend to other CITES countries because Asiatic black bear is not a listed species under CITES.¹⁰⁷

Third, only 35,000 of the millions of species on our planet are listed as protected species under CITES. Thus, millions of species can be killed and traded without CITES involvement. Only once these species are commercially exploited to the point of being threatened, is there even potential for them to become protected under CITES, and then only if a member country seeks to add them to the low-

¹⁰¹ See *id.* at art. III, app. I.

¹⁰² See *id.* at art. III-VI.

¹⁰³ See *id.* at art. VIII.

¹⁰⁴ See *id.* at art. XIV.

¹⁰⁵ See *Crime Report*, *supra* note 7, at 95-96.

¹⁰⁶ See *Operation Thunderstorm*, The Mar. Exec., <https://www.maritime-executive.com/article/operation-thunderstorm> (last visited July 13, 2019) [hereinafter *Operation Thunderstorm*].

¹⁰⁷ Endangered Species Act of 1973, 16 U.S.C. §1531 et seq. (1973); *Endangered Species: Foreign Species FAQ*, U.S. Fish & Wildlife Serv., <https://www.fws.gov/endangered/what-we-do/foreign-species-faq.html> (last visited July 13, 2019).

level protection of Appendix III or if two-thirds of the member countries are willing to vote to add them to the higher protections of Appendices I or II.¹⁰⁸ Obviously, allowing millions of species to be commercially exploited is a poor way to protect and preserve international biodiversity.

Fourth, CITES is not self-executing among member states. Therefore, its effectiveness is entirely dependent upon sufficiently implementing legislation through the domestic laws of each member state. Weakening its authority further, any member state may make specific reservations (self-declared exemptions to certain provisions of the treaty).¹⁰⁹ These discretionary powers of member states leave the success of CITES heavily dependent upon each party's decisions to draft, adopt, and strictly enforce wildlife protection laws. Yet, many parties fail to adopt stringent laws or fail to sufficiently enforce and prosecute under their laws. Reasons for such lukewarm approaches to CITES implementation are varied: lack of knowledge or sophistication to draft necessary legislation, lack of sufficient financing to hire and properly train and equip law enforcement and customs officers, lack of local political and cultural incentives to protect the wildlife, and in some situations, simple government corruption.

Following a call from the U.N. Secretary General to strengthen the U.N.'s response to fighting illegal wildlife trade (which in turn, furthers its Sustainable Development Goals to preserve biodiversity and ecosystems management for both "life on land" and "life below water") the U.N. Environment Programme paired up with the CITES Secretariat to develop a collaborative initiative which provides assistance to priority countries and territories, those which are extensive importers or exporters of trafficked species, upon their request, to enhance their legislation.¹¹⁰ A significant part of this effort is outreach to member countries which have the cultural and political will to protect domestic wildlife, but lack sufficient funding and/or legal sophistication to develop comprehensive wildlife legislation and effective enforcement systems.¹¹¹ To this end, CITES has hosted legislative workshops in different parts of the globe.¹¹² It also provides a free model code, available in several languages, to establish "practicable, effective and

¹⁰⁸ See 27 U.S.T. 1087, *supra* note 8 at art. III-V.

¹⁰⁹ See *id.* at art. XXIII.

¹¹⁰ See Transforming Our World: the 2030 Agenda for Sustainable Development, G.A. Res. 70/1, U.N. Doc. A/RES/70/1 (Sept. 27, 2015). *Biodiversity and Ecosystems Management*, United Nations Development Programme, <https://www.undp.org/content/undp/en/home/2030-agenda-for-sustainable-development/planet/environment-and-natural-capital/biodiversity-and-ecosystems-management.html> (last visited July 13, 2019).

¹¹¹ See *National Laws for Implementing the Convention*, CITES, <https://cites.org/legislation> (last visited July 13, 2019).

¹¹² See *id.*

clear legal provisions.”¹¹³ Further, it hosts training schools and videos for wildlife protection agents.¹¹⁴

However, such efforts seem small in the face of the dozens of countries with inadequate legislation and enforcement, particularly when one remembers that participation in any such improvements are at the discretion of the member states. CITES leaves the methods for legislation and enforcement up to the member states. While maintaining aggressive and technologically-current regulations and enforcement mechanisms are critical for advancing the goals of CITES, many studies indicate that only a few CITES member nations have implemented adequate legislation to protect threatened species.¹¹⁵ There is a particularly noticeable failure of many member states to treat wildlife crime as a serious criminal offense.¹¹⁶ Even obtaining compliance with the basic reporting requirements of CITES, such as import and export of listed species, can be challenging, with far less than 100% of the CITES members providing necessary data to CITES researchers.¹¹⁷ Such data is highly valuable in identifying illegal trade routes, weak customs points, and tracking species losses. Unfortunately, the rampant failure of member states to comply with the spirit, intent, and obligations of CITES is an issue which has limited the effectiveness of the Convention throughout its forty-year history.

Member countries which fail to comply with CITES mandates can be identified as parties of “primary concern,” “secondary concern,” and of “importance to watch,” based on the nature and number of CITES violations.¹¹⁸ These countries are encouraged to implement measures, such as legislative enactments, public awareness campaigns, and/or more vigorous enforcement tactics to correct the violations.¹¹⁹ Continued failure to comply with CITES rules can result in suspension of trade between the non-compliant country and other member countries, resulting in significant economic consequences.¹²⁰

CITES administration requires extensive worldwide cooperation among member countries. Effective implementation of CITES to substantially stem the trade of illegal wildlife requires well-written laws; well trained, equipped, and funded law enforcement officers, border patrol, and customs officers; and transnational cooperation and information sharing. However, whether CITES

¹¹³ See CITES Secretariat, *Model Law on International Trade in Wild Fauna and Flora*, <https://cites.org/sites/default/files/eng/prog/Legislation/E-Model%20law-updated-clean.pdf> (last visited Oct. 26, 2019).

¹¹⁴ See CITES, ICWWC in Action, <https://www.cites.org/eng/prog/iccwc.php/Action>.

¹¹⁵ See generally *Crime Report*, *supra* note 7.

¹¹⁶ See *id.* At 95-96.

¹¹⁷ See OUTHWAITE & BROWN, *supra* note 51.

¹¹⁸ See *id.*

¹¹⁹ See *id.*

¹²⁰ See 27 U.S.T. 1087, *supra* note 8; UNODC, *supra* note 55, at 78-80.

members can rise to the challenge of halting highly organized, well-funded, and transnational criminal effort is debatable.

C. Efforts to Strengthen Member State Legislation and Enforcement

The shortcomings of CITES resulting from lack of effective member legislation, lack of strenuous member enforcement efforts, and lack of authority for CITES leadership to apply significant civil or criminal sanctions to member states or wildlife traffickers, have been extensively reported upon, including a 2018 exposé of the trafficking industry by Rachel Nuwer, *Poached*.¹²¹ As a result, a number of resolutions and decisions have been issued by the Conference of the Parties to urge and encourage greater compliance by member states with the terms and goals of the Convention.¹²² Yet, these resolutions and decisions do not force any additional obligations upon non-compliant countries.

More decisively, CITES has created multi-national collaborations with international law enforcement agencies.¹²³ Through these collaborations, law enforcement funding, expertise, data, and other resources are pooled under an umbrella organization known as the International Consortium on Combating Wildlife Crime (“ICCWC”).¹²⁴ The ICCWC is relatively new, having been created by an international treaty signed in St. Petersburg, Russia in 2010, but it has already completed a number of large and successful criminal enforcement operations (discussed further in Part IV).

Members of the ICCWC (which can work under the ICCWC umbrella or independently of it) include Interpol, the United Nations Office on Drugs and Crime, the World Bank, and the World Customs Organization.¹²⁵ Interpol is well-known as one of the world’s oldest and largest international police organizations, composed of nearly 190 member countries.¹²⁶ Although Interpol’s focus on environmental crime is not as widely known as its other criminal investigations, Interpol boasts a Sub-Directorate dedicated solely to environmental security, with a focus on wildlife crime.¹²⁷ Another significant member of ICCWC, the United Nations Office on Drugs and Crime (“UNODC”) is the office of the U.N. tasked

¹²¹ See NUWER, *supra* note 10, at 207-08.

¹²² See CITES, Decisions 17.58-17.64, on National Laws for Implementation of the Convention (2017); CITES, Resolution Conf. 8.4 (Rev. CoP15) on National Laws for Implementation of the Convention (2015).

¹²³ See CITES, ICCWC in Action, <https://www.cites.org/eng/prog/iccwc.php/Action> [hereinafter CITES in Action].

¹²⁴ See *id.*

¹²⁵ ICCWC, STRATEGIC MISSION 2014-2016 (2014), https://cites.org/sites/default/files/eng/prog/iccwc/ICCWC_Strategic_Mission-WEB.pdf.

¹²⁶ *What is INTERPOL?*, INTERPOL, <https://www.interpol.int/Who-we-are/What-is-INTERPOL> (last visited Dec. 23, 2019).

¹²⁷ *Environmental Crime*, INTERPOL, <https://www.interpol.int/Crimes/Environmental-crime> (last visited Dec. 23, 2019).

with fighting international illegal drugs and organized crime.¹²⁸ Part of the UNODC directive is to combat “Wildlife and Forest Crime.”¹²⁹ The World Bank provides financial and technical assistance as part of its goal to reduce poverty and support progress within developing nations, both of which are harmed by ongoing depletion of natural resources through the illegal wildlife trade.¹³⁰ The World Bank specifically targets anti-money laundering and forest law enforcement efforts.¹³¹ Finally, the World Customs Organization (“WCO”), an international customs organization advocating global customs standards, trade supply chain security, enhancement of enforcement and compliance actions, and sustainability, is understandably a vital member of ICCWC in efforts to stop illegal cross-border trade.¹³² CITES serves as an administrator and resource to this partnership.¹³³

However, despite more cooperative international efforts, the continuing failure of many CITES member governments to enact sufficient laws to deter trafficking, or to enforce existing laws, allows poachers and illegal traders to kill and trade thousands of endangered species every year.

PART IV: LAWS AND LAW ENFORCEMENT EFFORTS AROUND THE GLOBE

Wildlife traffickers use well-established international trade routes and financial markets to move illegally obtained flora and fauna across the globe: from the poachers, to the traders, to the sellers, to the eventual end-users.¹³⁴ In addition to the CITES approaches discussed above, many nations have regulations and enforcement mechanisms in place and often join together in collaborative international law enforcement operations.

¹²⁸ *Wildlife and Forest Crime*, UNITED NATIONS OFFICE ON DRUGS AND CRIME, <https://www.unodc.org/unodc/en/wildlife-and-forest-crime/index.html> (last visited Dec. 23, 2019).

¹²⁹ See generally *Wildlife and Forest Crime*, *supra* note 26.

¹³⁰ See *What We Do*, The World Bank, <http://www.worldbank.org/en/about/what-we-do> (last visited July 13, 2019).

¹³¹ WORLD BANK FIN. SECTOR AND WORLD BANK INST., ANTI-MONEY LAUNDERING AND COMBATING THE FINANCING OF TERRORISM, 20-28 (2002); see, e.g., Forest Law Enforcement and Governance East Asia Ministerial Conference, Sept. 11-13, 2001, <https://www.worldbank.org/en/topic/forests/brief/fleg-regional-forest-law-enforcement-governance>.

¹³² See *ICCWC Partners*, CITES, <https://www.cites.org/eng/prog/iccwc/partners.php> (last visited July 13, 2019) [hereinafter CITES Partners].

¹³³ See *ICCWC Approach*, CITES, <https://www.cites.org/eng/prog/iccwc.php/Strategy> (last visited July 13, 2019).

¹³⁴ UNITED NATIONAL OFFICE ON DRUGS AND CRIME, FINANCIAL FLOWS OF WILDLIFE CRIME (2018); *Corruption and Wildlife Crime*, *supra* note 22.

*A. International Enforcement Efforts.**i. International Consortium on Combating Wildlife Crime (ICCWC)*

As noted above, the ICCWC is a joint effort of CITES, Interpol, the UNODC, the World Bank, and the WCO to halt illegal wildlife crime. While barely a decade old, the ICCWC has undertaken a number of significant executive and enforcement actions toward combatting international wildlife crime. The ICCWC *Strategic Programme for 2016 through 2020* outlines ICCWC's strategic goals which focus on local, national, and international assistance programs for policy-makers and enforcement officers. First, the ICCWC undertakes administrative and organizational steps to initiate and encourage regional and cross-border cooperative efforts to share information, enhance border security, and assist in criminal prosecutions.¹³⁵ Second, the ICCWC, provides assistance to nations seeking to strengthen their legislative framework with regard to wildlife crime.¹³⁶ Third, the ICCWC provides training and technical assistance to law enforcement officers, prosecutors, and judicial officials with a specific focus on wildlife crime and its associated criminal activity, such as corruption and money laundering.¹³⁷ Fourth, ICCWC works to increase public awareness of wildlife crime and to harness public concern into political action.¹³⁸ Fifth, ICCWC facilitates ongoing data collection which it combines with forensic technology to identify and target areas of wildlife crime, such as high levels of poaching and significant trade routes.¹³⁹ These data collection and forensic endeavors are also employed to assist law enforcement officers and prosecutors in development of admissible evidence for prosecutions.¹⁴⁰ The ICCWC self-monitors its efforts in each of these endeavors to determine their efficacy.¹⁴¹

These five strategic goals are implemented in a variety of ways. First, the ICCWC has developed a "Wildlife and Forest Crime Analytic Toolkit" designed for deployment to affected countries to assist on a variety of matters related to fighting wildlife crime.¹⁴² These tools include guidance on drafting crime prevention legislation; implementing preventative measures; recommendations for law enforcement; prosecutorial tools for successful criminal prosecutions, such as adequate data collection; and judicial training on the criminal issues involved in wildlife crime.¹⁴³ While the receiving national government is

¹³⁵ See *Strategic Programme*, *supra* note 15.

¹³⁶ See *id.*

¹³⁷ See *id.*

¹³⁸ See *id.*

¹³⁹ See *id.*

¹⁴⁰ See *Strategic Programme*, *supra* note 15.

¹⁴¹ See *id.*

¹⁴² See *Tools*, CITES, <https://cites.org/eng/prog/iccwc.php/Tools> (last visited June 30, 2019).

¹⁴³ See *id.*

responsible for implementation of the Toolkit, the ICCWC provides continuing support in the form of fundraising assistance, securing expertise, and guidance during legislation implementation and training.¹⁴⁴ The Toolkit has been deployed, and is at various stages of implementation, in a number of key countries, including Peru, Guyana, Colombia, Mexico, Bahamas, Togo, Gabon, Congo, Democratic Republic of the Congo, Angola, Botswana, Mozambique, Madagascar, the United Republic of Tanzania, Kenya, Vietnam, Bangladesh, Nepal, Bosnia, and Herzegovina.¹⁴⁵

Second, ICCWC has also deployed “Wildlife Incident Support Teams” (“WISTs”) which assist countries which have suffered from significant poaching activities or have made large-scale seizures of illegally-traded CITES species (indicating that the country is a trade hub or destination).¹⁴⁶ These WISTs guide and facilitate follow-up actions for law enforcement purposes, such as the collection of DNA samples and analysis of how additional government efforts may be implemented to fight the illegal trade within the county.¹⁴⁷ WISTs have provided assistance in the United Arab Emirates, Madagascar, Sri Lanka, and Togo.¹⁴⁸

Third, the ICCWC has provided specialized training for law enforcement officers and other officials on topics such as investigative techniques and DNA sampling, methods to combat smuggling, anti-money laundering, and controlled delivery.¹⁴⁹ For example, ICCWC hosted a regional judiciary and prosecutor workshop in early 2019 in the Kavango Zambezi Area (“KAZA”) region of Africa, including Angola, Botswana, Namibia, Zambia and Zimbabwe.¹⁵⁰ This workshop was designed to guide countries in methods to improve prosecutions, adjudications, sentencing, and case management against wildlife traffickers.¹⁵¹ A significant goal of this workshop was to increase official awareness of the serious ramifications of transnational wildlife crime, not just with regard to environmental concerns but also in regard to the wide range of associated criminal activities, with the hope that such awareness will lead to greater support for anti-trafficking efforts from prosecutorial and judicial sectors.¹⁵²

Finally, the ICCWC has been directly involved in a number of transcontinental law enforcement actions, including Operation Cobra I, II, and III, in which tens of thousands of illegally traded wildlife parts and specimens were seized around

¹⁴⁴ *See id.*

¹⁴⁵ *See CITES in Action, supra* note 123.

¹⁴⁶ *See id.*

¹⁴⁷ *See id.*

¹⁴⁸ *See id.*

¹⁴⁹ *See id.*

¹⁵⁰ *See* Press Release, TRAFFIC, *Workshop Held to Boost Prosecutions of Wildlife Criminals Windhoek, Namibia* (Feb. 27, 2019) (on file with author).

¹⁵¹ *See id.*

¹⁵² *See id.*

the world.¹⁵³ The most recent Cobra Operation in 2015, Cobra III, involved cooperation of 62 countries and resulted in seizure of over 11,000 dead and live specimens as well as 100,000 traditional Asian medicine pills composed of trafficked wildlife parts. ICCWC was also involved in Operation Paws and Operation Thunderbird, discussed further in section ii below.

Transnational funding is vitally important to successful counter-trafficking operations. ICCWC partner, the World Bank, assists in securing funding for these projects.¹⁵⁴ Many individual countries have pledged large sums toward fighting wildlife crime. Funding for the 2016-2020 ICCWC Strategic Program included 13,500,000 euros donated by the European Union, 40,000 euros from Germany and 4,000,000 pounds donated by the United Kingdom, 85,000 euros from France and 200,000 euros from the Principality of Monaco, a total international investment of approximately \$20 million in U.S. dollars.¹⁵⁵ This is not to indicate that the United States fails to financially support international efforts. In 2017 alone, the U.S. Fish and Wildlife Service allocated over \$21 million to 48 partner countries in support of 141 counter-wildlife trafficking projects.¹⁵⁶ Such projects included equipping and training anti-poaching law enforcement officers as well as community engagement activities.¹⁵⁷

ii. INTERPOL

Interpol has been a leader in international efforts to aggressively and effectively fight wildlife crime. Over the last decade, Interpol has been engaged in extensive international law enforcement operations. Each of the investigative and enforcement operations has resulted in a massive amount of seizures, arrests, and information, as described further below.

The 2012 Operation Worthy and 2015 Operation Worthy II were early Interpol efforts to stem wildlife crime, both focusing on ivory illegally targeted in and out of Africa.¹⁵⁸ Operation Worthy I led to 200 arrests and seizure of almost 2 tons of ivory, 20 kilograms of rhino horn, and military-grade automatic weapons.¹⁵⁹

¹⁵³ See CITES in Action, *supra* note 123; Press Release, CITES, Successful Operation Highlights Growing International Cooperation to Combat Wildlife Crime, https://cites.org/eng/news/pr/iccwc_press_release_cobra_III (last visited July 30, 2019).

¹⁵⁴ See CITES Partners, *supra* note 132.

¹⁵⁵ Press Release, CITES, Fight Against Wildlife Crime Gets a USD20 Million Boost (Nov. 29, 2018) (on file with author).

¹⁵⁶ See *id.*

¹⁵⁷ See *id.*

¹⁵⁸ See *id.*; *Corruption and Wildlife Crime*, *supra* note 22; INTERPOL's 'Operation Worthy' Fights Illegal Ivory Trade with IFW, HUFFINGTON POST (July 26, 2012), https://www.huffpost.com/entry/interpol-operation-worthy_n_1696166 [hereinafter INTERPOL's 'Operation Worthy'].

¹⁵⁹ See INTERPOL's 'Operation Worthy', *supra* note 158.

Operation Worthy II resulted in seizure of another 4.5 tons of elephant ivory and rhino horn and identified 25 criminal groups for further investigation.¹⁶⁰

Interpol described its 2014 operation, INFRA-Terra (International Fugitive Round Up and Arrest), as “the first global operation targeting . . . nine fugitives wanted for environmental crimes, in particular wildlife crime.”¹⁶¹ The operation was heavily funded by the European Union and ICCWC.¹⁶² This operation focuses on locating and arresting significant wildlife traffickers.¹⁶³

On the heels of its INFRA-Terra success, Interpol’s Environmental Security Unit seized hundreds of animals in a five-month long criminal investigation entitled, Operation PAWS (Protection of Asian Wildlife Species) under its Project Predator umbrella.¹⁶⁴ This operation was an extensive collaborative effort involving public and private cooperation from Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand, Vietnam, Canada, Australia, and the United States (which provided significant funding through its Agency for International Development).¹⁶⁵ Recognizing that cyber communication is a primary tool for poachers and traders, this operation also involved internet-based and social media organizations.¹⁶⁶ While Operation PAWS initially focused on big cat trade, such as leopards and tigers, the investigation resulted in seizures of a wide variety of trafficked wildlife parts, including 3,500 kilograms of elephant ivory, 280 kilograms of pangolin scales, rhino horns, and more than 4,000 kilograms of red sandalwood.¹⁶⁷ Live animals were also rescued, including tigers, leopards, bears, monkeys, red pandas, lions, crocodiles, turtles, tortoises, and birds.¹⁶⁸

¹⁶⁰ See *Corruption and Wildlife Crime*, *supra* note 22.

¹⁶¹ Press Release, CITES, A Big Step Forward in the Fight Against Wildlife Crime (Nov. 17, 2014) (on file with author).

¹⁶² See *id.*

¹⁶³ See Tex Dworkin, *First 2 Fugitives from Interpol’s Most Wanted Environmental List Nabbed*, CARE2 (Jan. 5, 2015), <https://www.care2.com/causes/first-2-fugitives-from-interpols-most-wanted-environmental-list-nabbed.html>; see generally Press Release, INTERPOL, Interpol Makes Public Appeal to Help Track Environmental Fugitives, (June 4, 2019); Arthur Neslen, *Interpol Launches Most-Wanted List of Environmental Fugitives*, THE GUARDIAN (NOV. 17, 2014), <https://www.theguardian.com/environment/2014/nov/17/interpol-launches-first-appeal-for-environmental-fugitives>.

¹⁶⁴ Press Release, INTERPOL, Interpol News Item, Hundred of Animals Seized in Operation Targeting Wildlife Trafficking Across Asia (Dec. 19, 2014).

¹⁶⁵ See *id.*

¹⁶⁶ See *id.*

¹⁶⁷ See *id.*

¹⁶⁸ See *id.*; *Operation PAWS, BIG CAT RESCUE* (Feb. 11, 2015), <https://bigcatrescue.org/operation-paws/>.

Operation Paws II, conducted in 2015, resulted in many more seizures.¹⁶⁹ Significant among these were more than 13 tons of pangolin products, representing approximately 1,000 murdered pangolins, with an estimated value of over US \$2 million.¹⁷⁰ Police, customs, and wildlife officials utilized the Paws II operation to develop methods for enhanced communication and intelligence sharing between participating countries regarding cyber investigations and DNA analysis, as well as coordination of future multi-agency international operations.¹⁷¹

Interpol's Environmental Security Programme and WCO Environmental Programme coordinated a series of "Thunder" operations between 2017 and 2019.¹⁷² Operation Thunderbird in 2017 involved 49 countries and territories and focused on trade in wildlife and timber.¹⁷³ The operation netted 1,300 seizures worth an estimated US \$5.1 million, including several tons of wood and timber, over 27,000 reptiles (almost 900 of which were alligators or crocodiles), 14 big cats, 48 primates, and 7 bear carcasses.¹⁷⁴ Interpol identified nearly 900 suspects.¹⁷⁵

The success of Operation Thunderbird led Interpol to collaborate with the WCO in a subsequent 2018 Operation Thunderstorm, led by Interpol's Wildlife Crime Working Group.¹⁷⁶ This operation involved police, customs, border, wildlife, forestry, and environment agencies from 93 countries. It resulted in the largest amount of seizures to date.¹⁷⁷ Over 1.3 tons of raw and processed elephant ivory, 8 tons of pangolin scales, 4,000 birds, over 20,000 reptiles (including approximately 870 alligators and crocodiles), 25 tons of wild "bush" meat (meat resulting from hunting animals like bear, elephant, crocodile, whale and zebra, etc.), 48 live primates, 16 big cats, and carcasses of 7 bears (including two polar bears).¹⁷⁸ In addition to this fauna, over 55,000 tons of timber was seized.¹⁷⁹ These

¹⁶⁹ See INTERPOL Operation Against Wildlife Trafficking Marks World Environment Day, INTERPOL (July 2015), <https://www.interpol.int/ar/1/1/2015/INTERPOL-operation-against-wildlife-trafficking-marks-World-Environment-Day>.

¹⁷⁰ INTERPOL Operation Against Wildlife Trafficking Marks World Environment Day, INTERPOL (July 2015), <https://www.interpol.int/ar/1/1/2015/INTERPOL-operation-against-wildlife-trafficking-marks-World-Environment-Day>.

¹⁷¹ See *id.*

¹⁷² See Wildlife Crime, Interpol, <https://www.interpol.int/en/Crimes/Environmental-crime/Wildlife-crime> (last visited June 15, 2019)[hereinafter Interpol Wildlife Crime].

¹⁷³ See *id.*

¹⁷⁴ See Operation Thunderstorm, *supra* note 92.

¹⁷⁵ See Interpol Wildlife Crime, *supra* note 172.

¹⁷⁶ See Press Release, CITES, Month-long Transcontinental Operation Hit Wildlife Criminals Hard (June 19, 2018) (on file with author) [hereinafter Transcontinental Operation].

¹⁷⁷ See Interpol Wildlife Crime, *supra* note 172; Transcontinental Operation, *supra* note 176.

¹⁷⁸ See Interpol Wildlife Crime, *supra* note 172.

¹⁷⁹ See Press Release, Europol, Wildlife Crime: European Seizures and Arrests in Global Operation Thunderstorm (June 21, 2018) (on file with author).

animals and parts would have been worth millions of U.S. dollars on the international black market.¹⁸⁰

In addition to the seizures, Operation Thunderstorm led to the identification of 1,400 suspects and extensive intelligence gathering regarding criminal trafficking methods and hotspots.¹⁸¹ Officials also used the operation to test the efficacy of new enforcement tools such as specialized sniffer dogs and x-ray scanners.¹⁸²

Operation Thunderball in 2019 was the third of the Thunder series.¹⁸³ This month-long operation, spanning over 100 countries, resulted in seizure of over 10,000 reptiles, birds and marine animals, including species of dolphins, sharks, over 30 big cats (including lion and tiger cubs), over two dozen primates, as well as one ton of ivory and 70 truckloads of timber and live plants.¹⁸⁴

In 2019 Interpol also teamed up with Europol for Operation Blizzard, which focused on illegal reptile trade.¹⁸⁵ Reptiles are traded both for live species and for parts, typically for fashion products.¹⁸⁶ Operation Blizzard involved 22 countries and resulted in the seizure of almost 5,000 lizards, or parts thereof, and arrests of over 180 suspects.¹⁸⁷ Seizures included 20 live crocodiles and alligators; 2,700 turtles and tortoises; and 1,500 snakes, lizards, and geckos.¹⁸⁸ Products made from illegally traded reptiles, such as handbags, wallets, medicines, and taxidermy were also seized.¹⁸⁹

The law enforcement operations detailed above demonstrate two important realities of the illegal trafficking trade. First, the good news: international law enforcement organizations have begun to take wildlife crime seriously and undertaking extensive, sophisticated and cooperative efforts to fight this form of organized crime. Unfortunately, the second take away is less encouraging. The enormous numbers of seizures of all different types of endangered and threatened species, as detailed above, indicate an extensive amount of killing which is not decreasing. It is particularly concerning that these seizures only demonstrate the amount of wildlife found in the possession of apprehended traders. The numbers

¹⁸⁰ Transcontinental Operation, *supra* note 176.

¹⁸¹ See Interpol Wildlife Crime, *supra* note 172.

¹⁸² Transcontinental Operation, *supra* note 176.

¹⁸³ See Alan Yuhas, *Interpol Operation Seizes More Than 10,000 Animals in Anti-Trafficking Campaign*, NEW YORK TIMES (July 10, 2019), <https://www.nytimes.com/2019/07/10/world/asia/interpol-wildlife-trafficking.html>; Rachel Fobar, *Most Widespread Wildlife Crime Raid Ever Sweeps Across More than 100 Countries*, NATIONAL GEOGRAPHIC (July 10, 2019), <https://www.nationalgeographic.com/animals/2019/07/interpol-wildlife-seized-most-countries/>.

¹⁸⁴ See Yuhas, *supra* note 183.

¹⁸⁵ *Illicit Trade Reptiles: Hundreds of Seizures and Arrests in Global Operation*, INTERPOL (June 3, 2019), <https://www.interpol.int/en/News-and-Events/News/2019/Illicit-trade-in-reptiles-hundreds-of-seizures-and-arrests-in-global-operation>.

¹⁸⁶ See *id.*

¹⁸⁷ See *id.*

¹⁸⁸ See *id.*

¹⁸⁹ See *id.*

of those who avoid law enforcement and are able to transport their wildlife goods to market are not known but may be exponentially higher.

B. Domestic Enforcement Efforts.

Intergovernmental cooperation is vitally important to slowing international wildlife trafficking. However, individual nations also have a significant role, as locations of import or export (or sometimes both) of endangered species, to undertake domestic efforts to stem the trafficking trade. There are a wide variety of domestic regulations and enforcement efforts. The level of a nation's cultural interest and political will to protect endangered species can be measured by the strength of its laws and enforcement efforts.

The United States suffers from both import and export of illegally traded species, particularly at borders, ports, and international airstrips and thus has developed a robust body of anti-trafficking laws.¹⁹⁰ The most significant U.S. law to protect endangered and threatened species is the ESA.¹⁹¹ The ESA authorizes the U.S. Fish and Wildlife Service to designate a species as "Endangered," meaning at risk of extinction throughout all or a significant portion of its range, or "Threatened," meaning likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.¹⁹² Once a species is listed under the ESA, certain protections automatically go into place.¹⁹³ One of the most important provisions is a prohibition on "taking" the species, a term which includes any harassment, harm, pursuit, hunting, shooting, wounding, killing, trapping, capturing, or collecting without a permit to do so.¹⁹⁴

The ESA also directs the Department of the Interior to develop and implement "Recovery Plans" to protect and rehabilitate threatened or endangered species.¹⁹⁵ This may include protecting critical areas of its habitat (particularly mating and nesting areas), building wildlife corridors for safe species travel, destroying black

¹⁹⁰ See generally Tina Deines, *Illegal Wildlife Trade Booming Across U.S.-Mexico Border*, NATIONAL GEOGRAPHIC (March 14, 2017), <https://news.nationalgeographic.com/2017/03/wildlife-watch-wildlife-trafficking-reptiles-mexico-united-states/>; Darryl Fears, *Overwhelmed U.S. Port Inspectors Unable to Keep Up with Illegal Wildlife Trade*, WASHINGTON POST (October 17, 2014) https://www.washingtonpost.com/national/health-science/overwhelmed-us-port-inspectors-unable-to-keep-up-with-illegal-wildlife-trade/2014/10/17/2fc72086-fe42-11e3-b1f4-8e77c632c07b_story.html; UNODC, *supra* note 55.

¹⁹¹ See 16 U.S.C. §1531 et seq. (2019) (stating that the Lacey Act, 16 U.S.C.A. § 3373(d)(1)-(2) (2019), also imposes criminal felony sanctions for the transport, purchase, or sale of wildlife in violation of any law or treaty. Further, the Marine Mammal Protection Act, 16 U.S.C. §§1361 *et seq.*, 1401-1406, 1411-1421 (2019), protects all marine mammals, such as dolphins and manatees, from "taking" in U.S. waters and by U.S. citizens on the high seas. It also prohibits import of marine mammals and parts into the United States).

¹⁹² See 16 U.S.C.A. § 1532 (2019).

¹⁹³ See Interpol, *supra* note 164.

¹⁹⁴ See 16 U.S.C. §1538.

¹⁹⁵ See 16 U.S.C.A. § 1533 (2019).

market products of the species to limit consumer interest, or other actions necessary to rehabilitate the species.¹⁹⁶ Under the ESA, the federal government is authorized to enter into “Management Plans” with any state to manage conservation areas for endangered or threatened species.¹⁹⁷ States and the federal government may also work together through “Cooperative Agreements” to establish and maintain programs for the conservation of endangered and threatened species.¹⁹⁸ Finally, ESA protections include a requirement that all federal agencies must ensure that their actions are not likely to jeopardize the continued existence of a threatened or endangered species or destroy or adversely modify the species’ habitat.¹⁹⁹

There are stiff penalties for violations of the ESA including up to \$25,000 in civil fines per violation and criminal sanctions of up to \$50,000 or up to one year in prison, or both.²⁰⁰ In addition, the ESA allows citizens to enforce its provisions through lawsuits against any person, or against the federal or state governments or their agencies.²⁰¹ This citizen suit provision also allows a court to award the costs of litigation to either party.²⁰²

The ESA is intended as a protective statute for domestically endangered or threatened species.²⁰³ However, it includes provisions focused on international trade, such as making it “unlawful for any person subject to the jurisdiction of the United States to engage in any trade in any specimens contrary to the provisions of [CITES], or to possess any specimens traded contrary to the provisions of the Convention.”²⁰⁴ Foreign nationals can also be prosecuted within the U.S. for activities such as the possession, transport, sale, offer of sale, import, export, delivery, cutting, damaging, or destroying, of any ESA listed species.²⁰⁵

Further, the ESA contemplates international cooperation with regard to protection of other countries’ endangered or threatened species, CITES, and other treaties.²⁰⁶ Section 1537 of the ESA, “International Cooperation,” authorizes the federal government to provide aid to foreign countries to develop and manage programs for the conservation of ESA designated endangered or threatened

¹⁹⁶ See James Salzman & Barton Thompson, Jr., *Environmental Law and Policy*, (4th ed. 2014).

¹⁹⁷ See 16 U.S.C.A. § 1535 (2019).

¹⁹⁸ See *id.*

¹⁹⁹ See 16 U.S.C.A. § 1536 (2019).

²⁰⁰ See 16 U.S.C.A. § 1540 (2019).

²⁰¹ See *id.*

²⁰² See *id.*

²⁰³ See 16 U.S.C. § 153.

²⁰⁴ 16 U.S.C.A. § 1538 (2019).

²⁰⁵ See *id.*

²⁰⁶ See 16 U.S.C.A. § 1540 (2019).

species.”²⁰⁷ It also authorizes the federal government to enter into bilateral or multilateral agreements with foreign nations to achieve conservation of these designated species.²⁰⁸ Presumably, through such treaty, the federal government could agree to protect non-ESA listed species for the benefit of the contracting nations in exchange for that nation’s commitment to protect ESA listed species.

The United States is far from alone in its reliance on domestic laws to combat wildlife trafficking. Other countries facing threats posed by loss of biodiversity through poaching as well as countries pressured by the international community to limit their import of trafficked species also have extensive wildlife protection laws.²⁰⁹

For example, South Africa, a nation rich in biodiversity is also a victim of extensive illegal poaching and export of highly threatened species.²¹⁰ Of particular international concern, South Africa has the greatest number of remaining rhinos of any country in the world, accounting for nearly 80% of the remaining wild rhinos in Africa.²¹¹ Unfortunately, that makes the country one of the top targets for rhino poachers and illegal traders.²¹² There are only 5,000 black rhinos left in the entire continent of Africa and they are deemed “critically endangered.”²¹³ Faring only slightly better, there remain 20,000 “near threatened” white rhinos in Africa.²¹⁴ Although rhino poaching has been reduced from prior decades, it is estimated that three rhinos are still killed each day by poachers.²¹⁵

South Africa’s National Environmental Management: Biodiversity Act of 2004, which operates under the larger framework of the National Environmental Management Act of 1998, strives to stem such slaughter.²¹⁶ This law categorizes and protects both species and ecosystems, with designations of “critically endangered,” “endangered,” “threatened and protected,” and “vulnerable.”²¹⁷ One purpose of the Act is to protect designated species and ensure that natural

²⁰⁷ See 16 U.S.C. § 1537(a) (2019) (stating that in addition to CITES, the United States is member of the Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere, 1939-date T.S. 982 56 Stat. 1354).

²⁰⁸ See 16 U.S.C.A. § 1540 (2019).

²⁰⁹ The United States Department of State keeps a list of “Countries of Concern” and “Focus Countries” which are countries considered to be a “major source of wildlife trafficking products . . . , a major transit point of wildlife trafficking products . . . , or a major consumer of wildlife trafficking products.” U.S. DEP’T OF STATE, 2018 END WILDLIFE TRAFFICKING REPORT (2018).

²¹⁰ Outhwaite & Brown, *supra* note 51.

²¹¹ *African Rhinos*, Traffic.org, <https://www.traffic.org/what-we-do/species/rhinos/> (last visited Oct. 17, 2019).

²¹² See UNODC, *supra* note 55.

²¹³ *African Rhinos*, *supra* note 211. (One species of black rhino, *D.b. longpipes*, was declared extinct in 2011).

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ National Environmental Management: Biodiversity Act 10 of 2004 (S. Afr).

²¹⁷ *Id.* at ch. 1, 4 (lists of protected species are to be prepared and published by the Minister).

resources are managed in an ecologically sustainable manner.²¹⁸ The law prohibits a number of “restricted activities” including hunting, catching, killing, damaging, exporting, possessing, conveying, and selling threatened or protected species.²¹⁹ The Minister (a Cabinet member tasked with environmental management) may further prohibit, or require a permit for any activity which “may negatively impact on the survival of a listed threatened or protected species.”²²⁰ Further, the Act establishes terms for compliance with CITES obligations.²²¹ Violations of the Act can result in fines as well as imprisonment of up to five years.²²² In recent years, the South African government has successfully undertaken a number of criminal prosecutions,²²³ including a 2013 case in which a Thai national was sentenced to thirty years in prison for fraud relating to rhinoceros hunting permits,²²⁴ and a 2012 case in which a poacher was sentenced to ten years in prison for possession of rhinoceros horns without a permit.²²⁵ The Supreme Court of Appeal of South Africa has also broadly reaffirmed the right of the Minister of Environmental Affairs to regulate activities which may negatively impact survival of threatened species and manage biodiversity in an economically sustainable manner.²²⁶

Both the South African Constitution and the National Environmental Policy Act ensure rights of South African citizens to benefit from the natural resources of their country.²²⁷ Thus, the National Environmental Management: Biodiversity Act permits the people, communities, and governments of South Africa, to use natural resources.²²⁸ The Act allows “bioprospecting,” which may include commercial or industrial exploitation of biological resources, as well as distribution of profits from bioprospecting, subject to permitting and a risk

²¹⁸ *Id.* at ch. 4.

²¹⁹ *See id.*

²²⁰ *Id.*

²²¹ *Id.*

²²² Fines may be imposed as set in the Adjustment of Fines Act 101 of 1991 (S. Afr.) or in an amount equal to three times the commercial value of the specimen, whichever is greater. National Environmental Management: Biodiversity Act ch.9.

²²³ *See Lemtongthai v. S* 2014 (1) SACR 353 (Sup. Ct. App.) (S. Afr.); *see also March Against Rhino Poaching, eNCA*, <https://www.enca.com/news/watch-march-against-rhino-poaching> (last visited Oct. 18, 2019); *see also VICTORY for Rhino as Notorious Ndllovu Poaching Gang Sentenced to 25 Years Each, SA PEOPLE*, <https://www.sapeople.com/2019/04/03/victory-for-rhino-as-notorious-ndlovu-poaching-gang-sentenced-to-25-years-each/> (last visited Oct. 18, 2019).

²²⁴ *See Lemtongthai v. S* (1) SACR 353.

²²⁵ *See Chu v. S.*, 2012 ZAGPJHC 204 (S. Afr.).

²²⁶ *See SA Predator Breeders Assc. v. Minister of Environmental Affairs and Tourism*, 2010 SCA 151 (S. Afr.).

²²⁷ S. AFR. CONST., 1996 ch. 2 § 24, entitled, “Environment,” states: “Everyone has the right . . . to have the environment protected . . . and other measures that . . . secure ecologically sustainable development and use of natural resources while promoting justified economic and social development.”; *see also* National Environmental Management Act 107 of 1998 (S. Afr.); *see also* NUWER, *supra* note 10, at 264-65.

²²⁸ *See* National Environmental Management Act 107 of 1998 (S. Afr.)

assessment analysis.²²⁹ Such bioprospecting is to be undertaken in a sustainable fashion, which is defined as use of the biological resource “in a way and at a rate that (a) would not lead to long term decline; (b) would not disrupt the ecological integrity of the ecosystem in which it occurs; and (c) would ensure its continued use to meet the needs and aspirations of present and future generations of people.”²³⁰ Sustainable use by citizens and communities may include hunting of listed species, even rhinos and elephants under certain circumstances.²³¹

Like South Africa, Kenya, located on the eastern coast of Africa, is a range country, home to a great number of endangered and threatened species, most notably elephants and rhinos.²³² The county has an unfortunate reputation for government instability and corruption in law enforcement.²³³ Only recently has Kenya taken significant steps to stop poachers from decimating their natural resources.²³⁴ Current approaches include legislation, enforcement, and market-based strategies.²³⁵

The Wildlife Conservation and Management Act (enacted in 2012 to replace the 1976 Wildlife (Conservation and Management) Act) is now the preeminent Kenyan legislation to protect national wildlife.²³⁶ The Act designates species as “endangered,” “vulnerable,” “nearly threatened,” or “protected” and prohibits any activity involving such designated species without a permit.²³⁷ Hunting a designated species, whether for sport, subsistence, or commercial purposes is generally prohibited.²³⁸ However, farming and ranching of designed species is allowed for conservation, trade, and recreation (which may include hunting) if conducted subject to a permit.²³⁹

Soon after the new Act was adopted, a Wildlife Crimes Prosecution Unit was created to combat wildlife crime and specially train wildlife prosecutors.²⁴⁰ As a result, Kenya has successfully prosecuted dozens of wildlife crimes in recent

²²⁹ See National Environmental Management: Biodiversity Act ch. 6.

²³⁰ *Id.* at ch. 1.

²³¹ See South Africa National Environmental Management Act, pt 2.

²³² See Paul J. Zwier & David Sergio Glajar, *Wildlife Poaching and Rule of Law in Kenya*, 11(2) L. & Dev. Rev. 879 (2018).

²³³ *See id.*

²³⁴ *See id.*

²³⁵ *See id.*

²³⁶ Wildlife Conservation and Management Act, No. 47 (2013) KENYA GAZETTE SUPPLEMENT, No. 181; Wildlife (Conservation and Management) Act (2012) Cap. 376 (Kenya).

²³⁷ Wildlife Conservation and Management Act (2013) (Kenya).

²³⁸ *Id.* at pt. XI.

²³⁹ *Id.* at pt. VI; see generally T.K. Ronoh et al., *Hunting Apprenticeship as Indigenous Form of Education for Sustainable Conservation of Wildlife in May Forest of Kenya*, 1 EUR. J. EDUC. STUD. 1 (2016).

²⁴⁰ Hanibal Goitom, *Kenya: Implementation of New Wildlife Law Expedited*, L. Libr. of Cong. (Oct. 19, 2019, 1:45 PM), <https://www.loc.gov/law/foreign-news/article/kenya-implementation-of-new-wildlife-law-expedited/>.

years, which is in direct contrast to the very few successful prosecutions prior to enactment of the Act.²⁴¹

Recognizing that organized criminal trafficking continues to thrive, many private game ranches, known as reserves or parks, employ their own rangers and technology to fight poachers.²⁴² However, private security, typically including specially trained agents, military-grade weapons, and sophisticated surveillance technology, is very expensive.²⁴³ Thus many ranchers utilize the farming and ranching allowances of the Act to generate revenue for conservation efforts.²⁴⁴

Countries on the receiving end of illegally traded species may also have robust anti-trafficking laws due to international pressure to stem the flow of illegal products into their borders. Vietnam is a top consumer of internationally trafficked wildlife and wildlife parts, including rhino, elephant, and pangolin.²⁴⁵ Animal products are commonly purchased for food, medicinal purposes, gift-giving, and as status symbols.²⁴⁶ Culturally and politically, protecting endangered wildlife has been a low-level concern, if a concern at all.²⁴⁷ As such, Vietnam has earned a reputation on the world stage for turning a blind eye to the rampant illegal importing of endangered species which occurs within its borders.²⁴⁸ Allegations have even been made that Vietnamese government officials partake in the illegal trade or use illegally trafficked animal parts.²⁴⁹

The wildlife protection organization, TRAFFIC, has described Vietnam as a “country of primary concern” in the trafficking industry due to the popularity of endangered species for medicine, food, status symbols as well as its prominent role as a hub for cross-border trafficking.²⁵⁰ A recent report found evidence that ivory processing, designing jewelry, home decor and other items from ivory horn

²⁴¹ See Zwier & Glajar, *supra* note 232.

²⁴² See NUWER, *supra* note 10, at 210.

²⁴³ See *id.*

²⁴⁴ See *id.*

²⁴⁵ A pangolin is a subjectively adorable mammal which looks like a cross between an armadillo and an anteater. See Rachel Bale, *12 Photos Show the Adorable Pangolin in All its Glory*, NATIONAL GEOGRAPHIC (Feb. 15, 2019), <https://www.nationalgeographic.com/animals/2019/02/pangolin-pictures-world-pangolin-day/>. It is also one of the most illegally trafficked creatures on earth, stolen for its scales and its meat, and is highly endangered. See Convention on the International Trade in Endangered Species of Wild Fauna and Flora app. I, Mar. 3, 1973, 27 U.S.T. 1087 (valid Oct. 4, 2017); CITES CoP17: *Victory Today for Pangolins*, WCSNEWSROOM (Sep. 28, 2016).

²⁴⁶ See NUWER, *supra* note 10, at 258; USAID VIETNAM, *supra* note 27.

²⁴⁷ See NUWER, *supra* note 10, at 210.

²⁴⁸ *Viet Nam Under Scrutiny After Remarkable Sequence of Ivory Seizures*, TRAFFIC (Nov. 11, 2016), <https://www.traffic.org/news/viet-nam-under-scrutiny-after-remarkable-sequence-of-ivory-seizures/>.

²⁴⁹ *Id.*

²⁵⁰ *Id.*

for sale to Chinese tourists, is a growing business in Vietnam.²⁵¹ Da Nang Port in Vietnam has become notorious as a port of choice for traffickers bringing illegal ivory from Africa into Asia.²⁵² The town of Nhi Khe is known internationally as a hub of illegal wildlife trade.²⁵³ When arrests are made by Vietnamese officials, there are rarely convictions, a reality that protects and encourages the traffickers.²⁵⁴ “Criminal gangs persist with trafficking via Vietnam and doubtless the light penalties and very low risk of prosecution are major factors in that decision,” said Madelon Willemsen, head of TRAFFIC’s Vietnam office.²⁵⁵

International pressure has been focused on Vietnam to encourage real domestic enforcement against trafficking.²⁵⁶ The Wildlife Justice Commission, an international body which investigates organized criminal trafficking, held a Public Hearing at the Hague in 2016 at which there was extensive discussion of Vietnam’s failure to make a serious attempt to stem illegal wildlife trade into and throughout its borders.²⁵⁷ However, it is unclear as to whether this international pressure, without trade sanctions or other real consequences, will have meaningful or lasting effects on Vietnamese officials.

There are at least some signs of hope. In 2014, the Prime Minister of Vietnam directed all ministries and local authorities to prioritize wildlife trafficking.²⁵⁸ Since this directive was issued, there have been a number of arrests.²⁵⁹ Further, in 2018, Vietnam enhanced its Penal Code to better regulate wildlife crimes, such as hunting, catching, killing, caging, and transporting protected species, as well as

²⁵¹ *Viet Nam Under Scrutiny After Remarkable Sequence of Ivory Seizures*, TRAFFIC (Nov. 11, 2016), <https://www.traffic.org/news/viet-nam-under-scrutiny-after-remarkable-sequence-of-ivory-seizures/> [hereinafter *Viet Nam Under Scrutiny*]; USAID VIETNAM, *supra* note 30.

²⁵² *Spotlight on Da Nang as New Conduit in Global Ivory Trafficking*, TRAFFIC (Sept. 24, 2015), <https://www.traffic.org/news/spotlight-on-da-nang-as-new-conduit-in-global-ivory-trafficking/>.

²⁵³ *Independent Panel Confirms that Immediate Action by the Vietnamese Government is Required to Shut Down Wildlife Trafficking*, WILDLIFE JUSTICE COMMISSION (Nov. 17, 2016), <https://wildlifejustice.org/independent-panel-confirms-immediate-action-vietnamese-government-required-shut-wildlife-trafficking-networks-viet-nam/>.

²⁵⁴ *See Viet Nam Under Scrutiny*, *supra* note 251.

²⁵⁵ *Id.*

²⁵⁶ *See* NUWER, *supra* note 10, at 210.

²⁵⁷ *Independent Panel Confirms that Immediate Action by the Vietnamese Government is Required to Shut Down Wildlife Trafficking*, WILDLIFE JUSTICE COMMISSION (Nov. 17, 2016), <https://wildlifejustice.org/independent-panel-confirms-immediate-action-vietnamese-government-required-shut-wildlife-trafficking-networks-viet-nam/>.

²⁵⁸ *See* TRAFFIC, *Viet Nam Prime Minister Orders Action on Wildlife Crime*, (March 2014) <https://www.traffic.org/news/viet-nam-prime-minister-orders-action-on-wildlife-crime/>.

²⁵⁹ *Year in Review: Highlights from Implementing the U.S. National Strategy for Combating Wildlife Trafficking*, PRESIDENTIAL TASK FORCE ON WILDLIFE TRAFFICKING (Mar. 3, 2016), <https://2009-2017.state.gov/documents/organization/237594.pdf>; Sarah Ferguson, *Former Hanoi Customs Officer Gets 16-Years Following Ivory and Rhino Horn Theft from Government Warehouse*, TRAFFIC (Aug. 29, 2018), <https://www.traffic.org/news/former-hanoi-customs-officer-gets-16-years/>.

extending the reach of corruption laws to include private persons.²⁶⁰ The revised code includes penalties of up to 15 years in jail and fines of up to 5 billion dong for individuals (approximately \$215,000 US dollars) and 15 billion dong for other entities (approximately \$650,000 US dollars).²⁶¹

China is another significant importer of legal and illegal wildlife parts, where a 2018 survey indicated that approximately 15% of the population had purchased elephant, rhino, tiger, or pangolin.²⁶² As in Vietnam, rhino parts are desired as status symbols, gifts, and components of traditional medicines in China.²⁶³ This has led to fears that as China's population and prosperity continue to increase, the threat to remaining rhinos will also increase.²⁶⁴

In addition, in recent years, China has taken a more aggressive approach to fighting illegal wildlife trade. This approach includes new laws, stronger penalties, and public education.²⁶⁵ One of the most significant steps is China's recent ban on all ivory markets. The international community was relieved when, despite the significant cultural role ivory carving has occupied in China for thousands of years, the country closed all legal ivory markets by the end of 2017.²⁶⁶ Penalties for violation of the ivory ban may include fines and up to two years in prison.²⁶⁷ There are some indications that both legal and illegal trade decreased as the deadline for ivory market closure approached.²⁶⁸

China is also an ongoing participant in public relations campaigns to discourage purchase and use of illegally traded endangered wildlife parts.²⁶⁹ For example, the United States Ambassador to China recorded an anti-poaching commercial which, through a USAID campaign was viewed by over 23 million.²⁷⁰ Celebrities like Jackie Chan and Yao Ming have also participated in anti-trafficking awareness

²⁶⁰ CRIMINAL CODE, No. 100/2015/QH13 (Nov. 27, 2015), *amended and supplemented* Law No. 12/2017/QH14 (June 20, 2017); USAID VIETNAM, *supra* note 27.

²⁶¹ *Id.*

²⁶² See USAID, RESEARCH STUDY ON CONSUMER DEMAND FOR ELEPHANT, PANGOLIN, RHINO AND TIGER PARTS AND PRODUCTS IN CHINA (June 12, 2018) [hereinafter USAID CHINA].

²⁶³ *See id.*

²⁶⁴ *African Black and White Rhino Conservation*, TRAFFIC (May 7, 2019), <https://www.traffic.org/what-we-do/species/rhinos/>.

²⁶⁵ See Symposium Report, *Africa-Asia Pacific Symposium on Strengthening Legal Frameworks to Combat Wildlife Crime* (2017).

²⁶⁶ See *China's Ivory Ban: Workshop Held on the Achievement and Challenges*, TRAFFIC (Jan. 29, 2018), <https://www.traffic.org/news/chinas-ivory-trade-ban-workshop-held-on-the-achievement-and-challenges/> [hereinafter *China's Ivory Ban*].

²⁶⁷ However, the first conviction, just two weeks after the ban was imposed, was only HK\$8,000 (approximately US \$1,000) leading lawmakers to consider amendments to increase fines and jail time. Farah Master, *HK court Fines Ivory Trader \$1,000 for Illegal Trading as China Cracks Down*, REUTERS (Jan. 8, 2018, 10:41pm), <https://www.reuters.com/article/us-hongkong-ivory/hk-court-fines-ivory-trader-1000-for-illegal-trading-as-china-cracks-down-idUSKBN1EY0AE>.

²⁶⁸ See *China's Ivory Ban*, *supra* note 266.

²⁶⁹ *See id.*

²⁷⁰ PRESIDENTIAL TASK FORCE ON WILDLIFE TRAFFICKING, *supra* note 259.

campaigns sponsored by WildAid with slogans such as, “When the buying stops, the killing can too.”²⁷¹ Yet trafficking continues and local demand for exotic wildlife and parts remains high.²⁷²

Malaysia, located on the southeast peninsula of Asia, is a bit different from Vietnam and China in that it has striven to halt the flood of illegal wildlife trade in and out of its borders of its own accord, rather than in response to international pressure. Asia, combines extensive regulations with strong enforcement action to protect its wildlife, including the sun bear (*Helarctos malayanus*) sought for its gall bladder and bile, both of which are used in traditional medicines, and the Sunda pangolin (*Manis javanica*) killed for its meat and for its scales, which are also used in traditional medicines.²⁷³ Malaysia has enacted a number of national laws over the last few decades to protect both domestic and international endangered species.²⁷⁴ The Malaysian government has also made a number of notable arrests in recent years resulting in significant criminal penalties.²⁷⁵ Unfortunately, despite frequent and aggressive enforcement and prosecutions, Malaysia remains a hub for Asian trafficking.²⁷⁶

PART V: THE ARGUMENT FOR SUSTAINABLE HARVESTING.

Wildlife trade is on the rise.²⁷⁷ Seizures from illegal trade greatly outweigh the limited legal trade in threatened and endangered species.²⁷⁸ As just one example, between 2007 and 2013, there were approximately 1,500 pangolins legally traded.

²⁷¹ Jackie Chan and Yao Ming and other celebrity videos can be found at *Protecting Wildlife, Reducing Demand*, WILDAID, <https://wildaid.org/videos/> (last visited July 27, 2019).

²⁷² See Chris Shepherd, et al., *Rhinoceros Horns in Trade on the Myanmar-China Border*, 52 ORYX INT’L J. CONSERVATION 393 (Apr. 2018); Barbara Fraser, *China’s Lust for Jaguar Fangs Imperils Big Cats*, 555 NATURE (Mar. 1, 2018), <https://www.nature.com/magazine-assets/d41586-018-02314-5/d41586-018-02314-5.pdf>.

²⁷³ Melanie Chalil, Expert: Selfish Consumers Reason for Decline of Malaysian Sun Bear and Other Wildlife Population, MSN News (April 10, 2019); Melissa Hogenboom, Pangolins are the World’s Most Trafficked Mammal, BBC: Rare Earth (Oct. 6, 2016).

²⁷⁴ See Wildlife Conservation Act of 2010, Act 716 (2010) (Malay.); International Trade in Endangered Species Act of 2008, Act 686 (Feb. 5, 2018); National Forestry Act of 1984, Act 313 (1984) (Malay.); National Forestry Policy of 1978 (revised 1992) (Malay.); see generally United Nations Inter-Agency Task Force on Illicit Trade in Wildlife and Forest Products, *Africa-Asia Pacific Symposium on Strengthening Legal Frameworks to Combat Wildlife Crime*, (Bangkok, July 4-5, 2017).

²⁷⁵ Press Release, TRAFFIC, Malaysia Jails Two Vietnamese Nationals for Illegal Possession of Tigers, Leopards, and Bears, (Mar. 13, 2019) (on file with author); *Malaysia Makes Record Seizure of Endangered Pangolins*, OTTAWA BUSINESS DAILY (Feb. 12, 2019), <https://www.ottawabusinessdaily.ca/2019/02/12/malaysia-makes-record-seizure-of-endangered-pangolins-malaysia-news/>; *Businessman Charged in Connection with Malaysia’s Biggest Pangolin Scale Seizure*, TRAFFIC (Sept. 28, 2018).

²⁷⁶ See *id.*

²⁷⁷ See Outhwaite & Brown, *supra* note 51.

²⁷⁸ See UNODC, *supra* note 55.

Yet during that same period, 107,000 illegally captured pangolins were seized.²⁷⁹ The number of pangolins successfully traded on the black market is unknown but likely brings the numbers exponentially higher.²⁸⁰ Elephant poaching for ivory is at the highest level it has been in decades.²⁸¹

Countries have tried, with varying levels of effort and success, to stop the illegal trafficking of wildlife through regulations and bans. Yet, it is clear from the number of seizures and arrests made every year that the illegal wildlife trade is still abundant and thriving. This means that wildlife is still being hunted and killed, forests are being stripped and logged, communities are being robbed of their natural resources, and the earth's biodiversity is being drastically reduced.²⁸² New approaches are desperately needed.

One controversial approach to halting illegal wildlife trade is sustainable farming or harvesting. In its starkest terms, sustainable harvesting is raising endangered and threatened species, frequently for the purpose of killing them for parts. Therefore, it is not surprising that this proposal draws ire from preeminent wildlife organizations, such as TRAFFIC.

Yet, sustainable harvesting has a proven track record and is lauded across the globe in many situations. Private forests, or plantations, growing kenaf plants, southern pine, and other plant and tree species, grow cycles of plant products to supply the paper and cardboard industries.²⁸³ Such plants are a renewable resource and through such intentional growth and harvesting, there is less demand to cut down natural forest and old-growth plants and trees. The plant growers receive revenue; the consumers receive necessary raw material for paper products; and governments are able to regulate, and receive taxes, from the business income from the farms. Pig farms, chicken farms, and cattle farms are common examples of sustainable farming and harvesting of animals for eventual slaughter for meat, leather, and other products. Such farms can be government-regulated for concerns of health and humane treatment and self-regulated to ensure that animals are not over-harvested, which would reduce the long-term viability of the business.

Some range countries most affected by illegal poaching have experimented with sustainable harvesting techniques. Nigel Leader-Williams described how the legalization of white rhino hunting in South Africa led a number of land owners

²⁷⁹ See UNODC, *supra* note 55.

²⁸⁰ See *Impacts of Illegal Wildlife Trade: Hearings Before the Committee on Natural Resources (U.S. House of Representatives, 110th Cong. 110-62 (2008))* (estimating, seizures of illegally trafficked wildlife represent only 10% of the extent of such trade).

²⁸¹ See Kitade & Nishino, *supra* note 64.

²⁸² See Media Release, IPBES, Nature's Dangerous Decline 'Unprecedented': Species Extinction Rates 'Accelerating' <https://www.ipbes.net/news/Media-Release-Global-Assessment> (last visited July 10, 2019). *Report Says*, NPR, May 7, 2019, <https://www.npr.org/2019/05/06/720654249/1-million-animal-and-plant-species-face-extinction-risk-u-n-report-says/>.

²⁸³ See Sam Martin, *Paper Chase*, Ecology Global Network (Sept. 10, 2011), <https://www.ecology.com/2011/09/10/paper-chase/>.

to repopulate their lands with white rhinos, and protect the rhinos, in order to reap the financial benefits of commercial hunting.²⁸⁴ This has led in turn to significant increases in white rhino populations nationwide.²⁸⁵ The study found similar increases to elephant populations in Zimbabwe after sustainable hunting was permitted.²⁸⁶ Similarly, Jason Goldman noted the potential for significant conservation funding generated by big game hunts in range countries, although he expressed concern regarding the lack of scientific and economic data as to how hunting proceeds are actually reinvested in conservation efforts.²⁸⁷ As Mr. Goldman noted, accurate data is a critical component of any sustainable harvesting program.²⁸⁸

South Africa permits captive bird breeding, even of threatened and endangered birds.²⁸⁹ Through this program, the country has become the leading exporter of live birds to Asia.²⁹⁰ In an interesting and significant turn of events, the worldwide demand for live birds has decreased in recent years, indicating that a robust legal trade can saturate the market.²⁹¹ As noted above, South Africa also suffers from some of the worst rhino poaching in the world as a direct result of the demand for rhino horn.²⁹² Yet, it is recognized that under the South African Constitution and the National Environmental Policy Act that sustainable trade in rhino horn should be permitted in order to allow South African citizens to benefit from the natural resources of their country through hunting and tourism, and through the jobs and financial benefits reaped by both.²⁹³ As such, citizens are permitted to hunt many types of animals, including rhinos and elephants under specified circumstances.²⁹⁴ Other African countries, like Namibia and Zimbabwe have also experimented

²⁸⁴ See Nigel Leader-Williams, et al., *Trophy Hunting of Black Rhino: Proposals to Ensure Its Future Sustainability*, 8 J. INT'L WILDLIFE L. & POL'Y 1, 4 (2005).

²⁸⁵ See *id.*

²⁸⁶ See *id.* at 6.

²⁸⁷ See Jason G. Goldman, *Can Trophy Hunting Actually Help Conservation?* CONSERVATION MAGAZINE (Jan. 15, 2014) available at <https://www.conservationmagazine.org/2014/01/can-trophy-hunting-reconciled-conservation/> (Mr. Goldman also cited surveys indicating a widespread preference amongst hunters to hunt in countries with sustainable practices and enforcement, even where game or scenery is less enticing).

²⁸⁸ See *id.*

²⁸⁹ See PRESIDENTIAL TASK FORCE ON WILDLIFE TRAFFICKING, *supra* note 259.

²⁹⁰ See OUTHWAITE & BROWN, *supra* note 51.

²⁹¹ See *id.* at 138.

²⁹² See Rachel Bale, *More Than 1,000 Rhinos Killed by Poachers in South Africa Last Year*, NATIONAL GEOGRAPHIC (Jan. 25, 2018).

²⁹³ See CONST. OF S. AFR., 1996 art. 24 entitled, "Environment" (stating that "Everyone has the right ... secure ecologically sustainable development and use of natural resources while promoting justified economic and social development."); see also South Africa National Environmental Management Act, Act No. 107 of 1998; NUWER, *supra* note 10, at 264-65.

²⁹⁴ See South Africa National Environmental Management Act, Act No. 107 of 1998; Government, Notice (GN) No. 304 of 10 April 2012 (S.Afr.), entitled "Norms and Standards for the Marking of Rhinoceros and Rhinoceros Horn, and for the Hunting of Rhinoceros for Trophy Hunting Purposes".

with hunting elephants and other big game.²⁹⁵ Hunters can pay anywhere from \$65,000 to \$140,000 to hunt lions and about half that amount to hunt elephants (the lower price is due to bans on elephant “trophy” imports in many countries.)²⁹⁶ These prices provide local communities with economic reasons to protect the wildlife and their governments with funding necessary to do the same.²⁹⁷ As noted by ecologist Brian Child, “it’s all about the money – money to combat illegal wildlife trade, and money to prevent the much more serious problem of wildlife’s replacement by the cow or plow.”²⁹⁸

Citizens in South Africa, particularly those who operate game reserves and must fund the security necessary to protect rhinos (and elephants and big cats) argue that at a minimum, non-lethal harvest and international sale of rhino horn should be legalized.²⁹⁹ There are great stores of rhino horn from past seizures and from culling operations (conducted by park owners to discourage poachers from killing their rhinos).³⁰⁰ These stores could be sold for millions in U.S. dollars (white rhino horn is estimated to be valued at \$3,000 per pound or higher).³⁰¹ Revenues from horn sales could be reinvested to pay for desperately needed security personnel to guard the rhinos throughout their extensive habitat. Along with more guards, the proceeds of legal sales could fund necessary anti-poaching equipment, such as vehicles, guns, security cameras, etc. as well as specialized training for wildlife guards. Those same guards could be paid well for risking their lives to protect the wildlife and even be assured benefits such as medical care, life insurance, and retirement. Similarly, funds could be used to sufficiently train and equip customs officials to halt whatever illegal trade continues. Finally, the proceeds of horn sales could also be used to fund more extensive conservation and breeding programs.

Yet, instead of selling the rhino horn supplies to fund conservation and better enforcement, the horns sit in storage where they impose even greater financial and personnel burdens due to the need to protect these supplies from illegal traders.³⁰² Rhino horn harvesting should be one of the least controversial sustainable

²⁹⁵ Rachel Nuwer, *Hunt Elephants to Save Them? Some Countries See No Other Choice*, THE NEW YORK TIMES (Dec. 4, 2017), <https://www.nytimes.com/2017/12/04/science/elephants-lions-africa-hunting.html>.

²⁹⁶ *See id.*

²⁹⁷ *See id.*

²⁹⁸ *See id.*

²⁹⁹ *See* NUWER, *supra* note 10, at 258.

³⁰⁰ *See* Nick Visser, *South African Won’t Sell Its \$2 Billion Rhino Horns Stockpile*, HUFFINGTON POST (April 22, 2016).

³⁰¹ *See* Paula Kahumbu, *Rhino Horn Sales: Banking on Extinction*, THE GUARDIAN (Aug. 25, 2017), <https://www.theguardian.com/environment/africa-wild/2017/aug/25/rhino-horn-sales-banking-on-extinction>; Bryan Christy, *Special Investigation: Inside the Deadly Rhino Horn Trade*, NATIONAL GEOGRAPHIC (Oct. 2016), <https://www.nationalgeographic.com/magazine/2016/10/dark-world-of-the-rhino-horn-trade/#close>.

³⁰² *See* NUWER, *supra* note 10.

harvesting programs because the rhinos do not need to be killed to harvest their horns.³⁰³ In fact, on most reserves, the horns are already being removed to disincentivize poaching.³⁰⁴ Yet, to sell stored rhino horn reserves, two South African reserve owners had to take their multiyear lawsuit challenge to the government moratorium all the way to the highest court of South Africa.³⁰⁵

There are several examples of sustainable harvesting programs saving species on the verge of extinction. Two of these programs, the vicuña of Peru and the American alligator of the southern United States, are examined in detail below.

A. The Peruvian Vicuña (Vicugna Vicugnanotices):

The vicuña, a cousin of the llama, is a success story of sustainable harvesting. Vicuña fleece is considered the finest wool in the world, with an extremely high cold-resistance factor but fine texture, lighter than sheep's wool, even cashmere.³⁰⁶ It was once a material woven exclusively for royalty and more recently used as thermal undergarments for British Royal Air Force pilots during World War II.³⁰⁷ While the wool can be shorn without harming the vicuña, much of the post-colonial harvesting of vicuña wool was accomplished by hunting and killing the wild animals.³⁰⁸ When the value of vicuña wool reached a value of approximately US \$500 per pound, wild vicuñas were hunted to the point of extinction, leaving only an estimated 6,000 in the wild in 1975.³⁰⁹ Due to their perilous state, in 1975 the vicuña was listed on CITES Appendix I.³¹⁰

To save the vicuñas, conservationists reintroduced pre-colonial traditions of indigenous Peruvians to own and manage the vicuñas, then harvest their wool in a non-lethal manner.³¹¹ Applying this tradition to modern times, the wool could

³⁰³ See Carrie Collins-Fadell, Conservationist Proposes to Sell Rhino Horn for the Greater Good, *Nonprofit Quarterly* (Sept. 19, 2017) <https://nonprofitquarterly.org/conservationist-proposes-sell-rhino-horns-greater-good/>.

³⁰⁴ See *id.*

³⁰⁵ See generally Jani Actman, *It's Now Legal to Sell Rhino Horn in South Africa. The World's Top Breeder Makes His Move*, NATIONAL GEOGRAPHIC (Aug. 20, 2017), <https://news.nationalgeographic.com/2017/08/wildlife-watch-rhino-horn-south-africa-auction/>; Bryan Christy, *South Africa Just Lifted its Ban on the Rhino Horn Trade*, NATIONAL GEOGRAPHIC (May 23, 2016), <https://news.nationalgeographic.com/2016/05/160523-rhino-horn-ban-south-africa-cites-smuggling-john-hume-rhino-ranching-swaziland/>; Rachael Bale, *Breaking; Rhino Horn Trade to Return to South Africa*, NATIONAL GEOGRAPHIC (Apr. 5, 2017), <https://news.nationalgeographic.com/2017/04/wildlife-watch-rhino-horn-ban-overturned-south-africa/>.

³⁰⁶ See Tui De Roy, *Return of the Golden Fleece*, NATIONAL WILDLIFE FEDERATION (Jan. 1, 2002).

³⁰⁷ See *id.*

³⁰⁸ See *id.*

³⁰⁹ See *id.*; *A Conservation Journey*, *supra* note 43; Vanessa Romo, *How a National Reserve Stopped the Extinction of the Peruvian Vicuña*, MONGABAY (Sept. 17, 2018), <https://news.mongabay.com/2018/09/how-a-national-reserve-stopped-the-extinction-of-the-peruvian-vicuna/>.

³¹⁰ See *A Conservation Journey*, *supra* note 43.

³¹¹ See *id.*

be sold on the international market and provide commercial benefits to both the Peruvian government and local communities from the highly lucrative vicuña wool trade.³¹² To develop this program, private lands of the native Lucanas were designated into a 16,000-acre national reserve called the Pampa Galeras.³¹³ Competing animals, such as cattle and sheep, were removed from these lands (with the Lucanas consent).³¹⁴ Large corrals and protective fencing were installed (financed by the government organization, the National Corporation for South American Camelids) to keep vicuñas in, poachers out, and ownership of the vicuñas clear.³¹⁵

In addition to creating a national preserve, Peru strengthened several domestic protection laws so that the vicuñas were protected in the process of both domestic and international trade.³¹⁶ These included laws to establish indigenous ownership and management, marketing allowances and parameters, and sanctions for poaching.³¹⁷ Through CITES and bilateral treaties and agreements, international resources aided the Lucanas and the Peruvian governments both with providing expertise and much needed funding (which was, at times, used to hire armed guards to protect the vicuñas.)³¹⁸

The return of the once near-extinction vicuña is a success story in sustainable harvesting. The original vicuña population of the Pampa Galeras grew so well that vicuñas could be transported to other areas to reestablish extirpated herds.³¹⁹ In 1987, CITES determined that the vicuña could be downgraded from Appendix I to Appendix II.³²⁰ Once placed on the Appendix II list, Peruvians could sell the vicuña wool on the international market.³²¹ Each year, the Lucanas export approximately 1,000 kilograms of vicuña wool, which has a value of \$300 - \$450

³¹² See De Roy, *supra* note 306.

³¹³ See *id.*

³¹⁴ See *id.*

³¹⁵ See *id.*

³¹⁶ See *id.*

³¹⁷ There have been a number of conservation laws and treaties to protect the vicuña, including the Convention for Vicuña Conservation, Peru-Bol., August 16, 1969, signed between Peru and Bolivia (later joined by Chile, Argentina, and Ecuador) as well as the Convention for the Conservation and Management of Vicuña, December 20, 1979, signed between Bolivia, Chile, Ecuador, and Peru, and the Peruvian Forestry and Wildlife Law, No. 29763, July 2011 (replacing prior Forestry and Wildlife Law (Law 27308); see also Domingo Hocés Roque, *Conservation and Current Use of the Vicuña (Vicugna Mensalis) in Peru*, NDF WORKSHOP CASE STUDIES (2008), https://cites.org/sites/default/files/ndf_material/WG5-CS8-S.pdf.

³¹⁸ See Convention for the Conservation and Management of Vicuña, articles 6-8, Dec. 20, 1979; De Roy, *supra* note 306.

³¹⁹ See De Roy, *supra* note 306.

³²⁰ See *id.*

³²¹ See *id.*

per kilogram.³²² Employees at vicuña parks are paid competitive salaries for the area.³²³ The Lucanas community has been able to fund capital improvements, such as a school and health center, and improve existing facilities, such as the local church.³²⁴

This is not to say that the sustainable harvesting has been problem-free. This method of conservation was, by CITES standards, innovative and unique.³²⁵ Thus, the program experienced growing pains, including fluctuating vicuña wool prices, closed markets in many countries due to the vicuña's endangered status (such as in the United States where the vicuña was listed as an endangered species until it was reclassified as threatened in 2002, allowing for trade), lack of sufficient profits returning to the Lucanas communities to pay for fence maintenance, guards, wool shearing and cleaning facilities, and concerns about restricted genetic diversity amongst the vicuñas.³²⁶

Yet overall, this sustainable harvesting program is an unequivocal success story. Today, vicuña numbers are estimated at 320,000—over 50 times the population when the sustainable harvesting began.³²⁷

B. American Alligator (Alligator mississippiensis):

The American Alligator, an amazing reptile which has inhabited the earth for over 200 million years, was also nearly hunted to extinction by the 1950s.³²⁸ Alligator hide was in high demand for fashion, alligator meat was eaten in many communities, and so-called nuisance alligators were killed to make room for human expansion.³²⁹ In 1967, the American Alligator was given federal protection under the Endangered Species Preservation Act wherein hunting the reptile was prohibited.³³⁰ In 1973, it was one of the first species listed as endangered under the ESA.³³¹

³²² See Vanessa Romo, *How a National Reserve Stopped the Extinction of the Peruvian Vicuña*, MONGABAY (Sept. 17, 2018), <https://news.mongabay.com/2018/09/how-a-national-reserve-stopped-the-extinction-of-the-peruvian-vicuana/>.

³²³ See *id.*; *A Conservation Journey*, *supra* note 43.

³²⁴ See *A Conservation Journey*, *supra* note 43.

³²⁵ See *id.*

³²⁶ See De Roy, *supra* note 306; Romo, *supra* note 322; Endangered and Threatened Wildlife and Plants: Reclassification of Certain Vicuña Populations From Endangered to Threatened with a Special Rule, 50 CFR §17.40(m) (2002).

³²⁷ See *A Conservation Journey*, *supra* note 43.

³²⁸ See Elahe Izadi, *We Saved the Alligators from Extinction - then Moved into Their Territory*, THE WASHINGTON POST (June 17, 2016), <https://www.washingtonpost.com/news/animalia/wp/2016/06/17/we-saved-the-alligators-from-extinction-then-moved-into-their-territory/>.

³²⁹ See *id.*

³³⁰ See *id.* (stating that the Endangered Species Preservation Act of 1966 was a precursor to the Endangered Species Act of 1973).

³³¹ See *Alligators & Crocodilia*, U.S. FISH & WILDLIFE SERVICE, INTERNATIONAL AFFAIRS, <https://www.fws.gov/international/animals/alligators-and-crocodiles.html> (last visited July 10, 2019).

The U.S. government worked closely with southeastern states (home to most American alligator habitat) to develop rehabilitation plans,³³² which may include habitat protections and breeding programs. Due to its tropic and subtropic ecosystems, the State of Florida has been the home to American alligators for millennia.³³³ Florida's sustainable farming, harvesting, and hunting regulatory program is indicative of the common approach used by the federal and state governments to revive the American alligator population.³³⁴

In Florida, the Florida Fish and Wildlife Conservation Commission ("FWCC") manages sustainable alligator usage pursuant to Chapter 379, Florida Statutes.³³⁵ This conservation program of sustainable use allows regulated wild alligator hunting, regulated alligator farming, and regulated collection of wild alligator hatchlings and eggs.³³⁶

Wild alligator hunts have been permitted since 1988, subject to harvest quotas which only allow permit holders to "take" up to two alligators per permit.³³⁷ Permits are issued based on time of application or "first-come, first-served."³³⁸ Hunters must also secure and pay for CITES tags and a Florida trapping license.³³⁹ Hunts are highly regulated such that the FWCC is able to keep detailed records of harvest data over decades of hunts and ensure that these hunts do not result in an overall decrease in alligator population.³⁴⁰ The hunts are beneficial for a number of reasons. First, they encourage hunters to be involved in the preservation of

³³² *Alligators & Crocodilians*, U.S. FISH AND WILDLIFE SERVICES, <https://www.fws.gov/international/animals/alligators-and-crocodiles.html> (last visited Nov. 21, 2019).

³³³ See *American Crocodile: Species Profile*, NATIONAL PARK SERVICE, <https://www.nps.gov/ever/learn/nature/crocodile.htm> (last visited Nov. 21, 2019); *American Alligator: Species Profile*, NATIONAL PARK SERVICE, <https://www.nps.gov/ever/learn/nature/alligator.htm> (last visited Nov. 21, 2019).

³³⁴ See FLA.STAT. ch. 379, pt. IV (2019) "Wild Animal Life," as implemented through various rules found in FLA. ADMIN. CODE ch. 68A (2019), "Freshwater Fish & Wildlife"; U.S. FISH & WILDLIFE SERVICE, INTERNATIONAL AFFAIRS *supra* note 331; see also *American Alligator*, FLA. Fish & Wildlife Conservation Comm'n, <https://myfwc.com/wildlifehabitats/profiles/reptiles/alligator/> (last visited July 10, 2019).

³³⁵ FLA.STAT. ch. 379, pt. IV (2019) "Wild Animal Life," as implemented through various rules found in FLA. ADMIN. CODE ch. 68A (2019), "Freshwater Fish & Wildlife"; see also *American Alligator*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/wildlifehabitats/profiles/reptiles/alligator/> (last visited July 10, 2019).

³³⁶ FLA. ADMIN. CODE ch. 68A - 25.001 *et seq.* (2019), "Rules Relating to Endangered or Threatened Species".

³³⁷ See *id.*; *Statewide Alligator Harvest Program*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/wildlifehabitats/wildlife/alligator/harvest/> (last visited July 14, 2019).

³³⁸ See *id.*

³³⁹ FLA. ADMIN. CODE ch. 68A - 25.001 *et seq.* (2019), "Rules Relating to Endangered or Threatened Species".

³⁴⁰ See *Statewide Alligator Harvest Data Summary (2000-2018)*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/media/1687/alligator-annual-summaries.pdf> (last visited July 14, 2019); *Statewide Alligator Harvest Data Search (2000-2018)*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/wildlifehabitats/wildlife/alligator/harvest/data-search/> (last visited July 14, 2019).

alligators and alligator habitat so that the creatures survive for sport hunting. Second, the regulated hunts discourage poaching since legal hunting is allowed. Third, it enables hunters and gamekeepers to remove so-called “nuisance” alligators from populated areas where they can cause harm to humans and pets which, in turn, would lessen support for alligator preservation.³⁴¹

The state also allows alligator farms to raise American alligators and to process alligator parts for food, fashion, and tourist goods subject to FWCC inspection and oversight.³⁴² Much of the FWCC oversight relates to human safety concerns, such as maintenance of adequate fencing around alligator enclosures.³⁴³ However, health and welfare standards for “humane confinement” of alligators are also included, such as requirements for adequate size and drainage of tanks.³⁴⁴ Further, the issuance of farm permits are limited with regard to persons who have violated alligator protection laws or engaged in any illegal taking of any crocodilian species.³⁴⁵

Florida harvesting regulations allow alligator breeders and farmers to obtain permits to collect wild alligator eggs and hatchlings for captive restocking.³⁴⁶ However, quotas are set by the FWCC for the number of hatchling collection permits issued each year “based on the quantity of alligator habitat in each individual county and the best biological information that indicates the number of hatchlings that can be removed from the system without long-term adverse impacts on population levels.”³⁴⁷ No more than thirty (30) farms will be permitted to receive hatchlings so as to limit the hatchling demand.³⁴⁸

Further, only two groups of alligator farmers are issued permits for alligator egg collections each year, with priority given to farmers with existing farms and proven records of alligator maintenance.³⁴⁹ The FWCC also places quotas upon

³⁴¹ See Elliott McLaughlin et al., *Disney Alligator Attack: Resort to Add Warning Signs*, *Source Sgys*, CNN (June 16, 2016) <https://www.cnn.com/2016/06/16/us/alligator-attacks-child-disney-florida/index.html> (detailing a tragic antidotal tale of the rapid reversal of public opinion is reflected in the death of two year old, Lane Graves, at Walt Disney World resort after he was drowned by an alligator, and the rapid deployment of wildlife officers to kill multiple alligators in that lake within days of young Graves death).

³⁴² Florida Fish and Wildlife Conservation Commission, Alligator Meat Processors and Hide Buyers, <https://myfwc.com/wildlifehabitats/wildlife/alligator/processors-and-hide-buyers/> (last visited Nov 22, 2019).

³⁴³ FLA. ADMIN. CODE § 68A-25.004 (2019), “Regulations Governing the Operation of Alligator Farms”.

³⁴⁴ See *id.* at § 68A-25.004 (6).

³⁴⁵ See *id.* at § 68A-25.004 (2)(i).

³⁴⁶ See *id.* at § 68A-25.004 (2).

³⁴⁷ See FLA. ADMIN. CODE § 68A-25.031(1) (a) (2) (2019), “Regulations Governing Alligator Egg and Hatchling Collections on Lands Not Included in Alligator Management Programs”.

³⁴⁸ See FLA. ADMIN. CODE § 68A-25.004 (2) (f) (2019), “Regulations Governing the Operation of Alligator Farms”.

³⁴⁹ See FLA. ADMIN. CODE § 68A-25.031 (2019), “Regulations Governing Alligator Egg and Hatchling Collections on Lands Not Included in Alligator Management Programs”.

the number of nests which farmers may open during the collection period which is limited to a number which ensures “no long term negative impacts on alligator populations.”³⁵⁰ In this way, wild alligator populations are protected from over-harvesting. It also provides alligator farmers with incentive to report any poaching or excess collections by their competitors. Additionally, allowing the collection of wild eggs can introduce new genes to otherwise closed genetic pools and thereby aid with the overall survival of a healthy alligator population.³⁵¹

Both licensed hunters and farmers may sell the alligator meat and hides but only to State-licensed buyers.³⁵² The licensing requirement enables the State to strictly regulate conditions for hunting, farming, killing, processing, and selling of alligators and alligator parts to ensure that the processes are fair and safe for humans as well as humane to alligators, and most importantly, preserve the ongoing viability of the species.³⁵³

The regulatory program includes penalties as disincentives to hunting, farming, or trade outside of regulated boundaries.³⁵⁴ Any illegal sale, possession, or transport of live alligators or alligator parts is a Level Three violation which can be criminally prosecuted under Florida laws as a first degree misdemeanor, carrying penalties of up to one (1) year in jail and up to a \$1,000 fine.³⁵⁵ In certain circumstances, such activities can be deemed a Level Four violation which can be criminally prosecuted as a third degree felony, carrying penalties of up to five (5) years in prison and up to a \$5,000 fine.³⁵⁶ Violations of the regulatory structure may also result in suspension of any alligator-related license or permit and confiscation of any equipment used toward the unregulated activity.³⁵⁷

Yet sustainable harvesting has provided economic and recreational incentives to conserve the American alligator and its habitat. By 1987, the American alligator repopulation programs throughout the southeast were successful enough to delist the alligator as an Endangered species under the ESA (although it remains on the Threatened list due to its resemblance to the Endangered American crocodile).³⁵⁸ Today, in the state of Florida alone, there are estimated to be 1.3 million American alligators and over five million throughout the United States!³⁵⁹

³⁵⁰ See *id.* at § (2)(a)(4).

³⁵¹ Rajesh Wakchaure & Subha Ganguly, *Captive Breeding in Endangered Wildlife: A Review*, 4 J. OF BIOLOGICAL & SCI. OPINION 186 (2016).

³⁵² See FLA. ADMIN. CODE § 68A-25.052 (2019), “Regulations Governing the Processing of Alligators and the Sale of Alligator Meat and Parts”.

³⁵³ See *id.*

³⁵⁴ See FLA.STAT. §379.401 (2019).

³⁵⁵ *Id.*

³⁵⁶ See FLA.STAT. §§ 379.3014, 379.401, 379.409 (2019).

³⁵⁷ See *id.*

³⁵⁸ See *Florida’s Endangered and Threatened Species*, FLA. FISH & WILDLIFE CONSERVATION COMM’N, (December 2018), <https://myfwc.com/media/1945/threatend-endangered-species.pdf>.

³⁵⁹ See Izadi, *supra* note 328; *American Crocodile and Alligator*, DEFENDERS OF WILDLIFE, <https://defenders.org/wildlife/american-crocodile-and-alligator> (last visited July 6, 2019).

C. Benefits of Sustainable Harvest Trade

Legal wildlife trade can generate significant revenue for local communities and national governments.³⁶⁰ Governments can earn revenue in the form of taxes on wildlife goods, licensure fees on farmers and ranchers, and permit fees for hunting, processing, and exports. Local communities can earn profits from the sale of wildlife and wildlife parts, as well as wildlife-based tourism.

More importantly, on a global scale, endangered and threatened species are preserved for future generations through sustainable harvesting. For example, captive-bred animals and plants can be used to replenish and repopulate diminished populations of the subject wildlife.³⁶¹ Collected eggs, hatchling, sprouts, and the like can be used to diversify genetic pools suffering from closed ecosystems.³⁶²

Areas with robust legal and monitored wildlife trade have demonstrated less illegal trade.³⁶³ There is a simple logic to this: consumers who can purchase identical goods either legally from a reputed shop or known trader versus illegally from a secret room or unknown seller will naturally choose the more reliable and legal route. Legal purchases avert the risk of criminal or civil penalties. Legal trade is also easier to locate, as it may be openly advertised and can include enforceable assurances of quality and authenticity.

Admittedly, some consumers may choose to purchase illegal goods if the prices, and the perceived risk, is low. Thus, for sustainable harvesting to be successful in preventing illegal trade, two factors are important. First, there must be a real and significant risk of criminal penalties, jail time or fines, to deter purchase of illegally traded goods. CITES, ICCWC, and many individual countries are working to improve criminal penalties, criminal enforcement actions, and criminal prosecutions for illegal wildlife trade. These enforcement efforts are necessary in both a no-trade regulatory paradigm and a sustainable harvest regulatory trade paradigm.

The other facet of a successful sustainable harvest regime is that prices of sustainably harvested wildlife need to be comparable to, or less than, illegally traded prices. Illegal traders currently operate in markets of scarcity due to the bans on most endangered wildlife trade. Under basic economic rules of supply and demand, this scarcity allows illegal traders to demand higher payment for the wildlife product. However, if sustainably harvested trade of the wildlife or products was allowed, supply would increase, lowering market prices. The market for many of the most coveted wildlife products, rhino horn, elephant ivory horn,

³⁶⁰ See OUTHWAITE & BROWN, *supra* note 51.

³⁶¹ See *Rhinos Return to Rwanda*, African Parks (2019) <https://www.africanparks.org/campaign/rhinos-return-rwanda-2019>.

³⁶² See Wakchaure, *supra* note 351.

³⁶³ See OUTHWAITE & BROWN, *supra* note 51.

and pangolin, could quickly become saturated with years of seized and stored supplies. A saturated market will satisfy consumer demand and should result in reduced prices for all products. Reduced prices for both legal and illegal trade not only encourage buyers to purchase the legal and sustainably harvested products instead of illegally poached products, but also reduce the profit margins for organized crime thereby making illegal trade less appealing. As an additional benefit, reduced prices may render these products less impressive as status symbols or as gifts and thereby reduce consumer demand.

D. Criticisms of Sustainable Harvest Trade

Opening trade in endangered and threatened wildlife is a controversial stance with highly vocal critics.³⁶⁴ Academics and other conservationists have raised a variety of complaints toward the concept of sustainable commercial trade in endangered wildlife.

Critics maintain that illegally traded wildlife goods will always be cheaper for consumers than legally traded goods because the illegal traders do not incur costs to care for the wildlife, nor for import and export permits, nor for taxes or other costs involved in a legal harvesting business.³⁶⁵ As such, the argument follows that legal trade will never be able to compete with illegal trade. However, the argument ignores the many costs incurred by illegal traders which would not be borne by sustainable harvesters: hiring poachers to search for wildlife spread across thousands of miles; hiring international carriers to engage in covert methods of transport; high levels of product loss due to the unhealthy conditions of covert transport and seizure by law enforcement authorities; payments of bribes to local officials at the points of poaching, export, import, and sale; and legal expenses and fines when illegal traffickers are caught. While the expenses of engaging in illegal wildlife trade have not been quantified, there are certainly many associated costs which could raise the operating expenses involved in illegal trade higher than those of sustainable trade and potentially cause illegally traded products to cost more than legally traded products.

Critics also contend that allowing legal trade could increase demand for wildlife under a theory of “reverse stigma” in which more buyers would enter the market once the criminal stigma of wildlife trade is removed.³⁶⁶ However, this need not be the case if ongoing campaigns against wildlife trade continue. Simply because wildlife trade is made legal does not mean it will be, or will remain, culturally desirable or accepted. Public awareness campaigns have had great success in

³⁶⁴ See *Trade in Rhino Horn: Where We Stand on Legalizing the Trade*, TRAFFIC, <https://www.traffic.org/what-we-do/perspectives/trade-in-rhino-horn/> (last visited Aug. 31, 2019); see also Kahumbu, *supra* note 301.

³⁶⁵ See NUWER, *supra* note 10, at 258.

³⁶⁶ See *id.* at 264-65.

altering commercial views of wildlife. For example, for many centuries, animals like minks and foxes were killed in America to produce fashionable fur coats. Thanks to public awareness campaigns against fur use, fur as a fashion accessory has greatly diminished in America.³⁶⁷ Killing and trading animals for fur is, in many cases, legal but lacks consumer demand.

Similar public awareness campaigns, targeted toward China and Vietnam, are already underway. Celebrities such as Jackie Chan and Yau Ming speak out against wildlife trade from magazines, television, and internet ads.³⁶⁸ These anti-wildlife trade ads are necessary policy elements to both a no-trade and a sustainable harvest trade paradigm.

Critics of sustainable harvest raise other objections too. There are claims that legal trade opens new methods to smuggle illegal wildlife because traffickers can blend their illegally trafficked wildlife with the legal products.³⁶⁹ Yet, this disregards the reality that illegal trade is already thriving, criminals are earning billions of dollars from it, and no-trade regulations have not stopped the international criminal organizations. In short, smuggling is already occurring in countless ways. Further, the law enforcement techniques can be employed to prevent blending of legal and illegal trade through a variety of methods. First, false paperwork, such as import or export permits for illegally harvested wildlife, can be reduced by rooting out corruption among government officials tasked with permitting and customs work.³⁷⁰ Second, false trafficker claims that a traded species is a “look-alike” to a protected species rather than protected species, can be reduced by better training and use of DNA testing.³⁷¹

Finally, the basis for much criticism of sustainable harvesting is moral offense at commercial activities deemed “brutal,” “barbaric,” and “horrific.”³⁷² Advocates and participants in auctions for wildlife and parts have been threatened, even when the proceeds of such sales are designated for conservation efforts.³⁷³ Such emotional sentiments may be understandable but disregard this commercial enterprise as a potential wellspring of desperately needed funding to fight illegal trafficking. As stated by Namibia guide, Felix Marnewecke, “I feel quite shitty when an elephant dies, but those elephants pay for the conservation of the other

³⁶⁷ See Tamison O’Conner, *Prada Joins Fashion’s Anti-Fur Movement*, BUS. OF FASHION (May 22, 2019), <https://www.businessoffashion.com/articles/news-analysis/prada-joins-fashions-anti-fur-movement>.

³⁶⁸ See *Protecting Wildlife, Reducing Demand*, WILDAID, <https://wildaid.org/videos/> (last visited July 1, 2019).

³⁶⁹ See UNODC, *supra* note 55, at 56.

³⁷⁰ See *id.* at 11.

³⁷¹ See *id.* at 96.

³⁷² See *Animal Welfare Organisation Unveils Street Mural to Make a Stand Against Trophy Hunting*, PR NEWSWIRE ASSOCIATION LLC EUROPE (Oct. 28, 2015); Kahumbu, *supra* note 305.

³⁷³ Terry Anderson, *How Hunting Saves Animals*, HOOVER INSTITUTION (Oct. 29, 2015), <https://www.hoover.org/research/how-hunting-saves-animals>.

2,500 that move through here. Trophy hunting is the best economic model we have in Africa right now.”³⁷⁴

E. Designing a Successful Sustainable Harvest Program

As astutely noted by Amy Dickman, founder of the Ruaha Carnivore Project, “[p]eople may hate the ethics around trophy hunting, but to a lion (and to a conservationist), the consequence is the same whether it is shot by a trophy hunter, poisoned by a local villager or starved from lack of prey, so the aim should be to reduce overall unsustainable mortality rather than focusing on one particular activity.”³⁷⁵ There are a variety of methods to design a sustainable harvest program. This article has already reviewed programs to protect the American alligator and the Peruvian vicuña, which range from seasonable capture and shearing, to farming, to hunting.

In his study of legal lion hunting regulations across a number of range countries, Peter Lindsey and his research cohorts found a variety of regulatory tools have been employed to ensure the sustainability of lion populations, to various levels of success.³⁷⁶ Regulatory tactics include: quotas on numbers of species culled and limitations on age and gender; land leases which can be terminated if hunting results in overall population decrease or hunting abuses; financial remuneration of hunting proceeds to local communities; and monitoring requirements.³⁷⁷ This study indicates that sustainable harvesting in itself is not a threat to population survival and in fact can generate substantial funding toward conservation efforts.³⁷⁸ Mr. Lindsey notes, however, that a common problem in such programs is that quotas have been set too high due to a lack scientific data.³⁷⁹ While this study was limited to trophy hunting of lions, there are many facets which can be applied to other sustainability programs, such as the need to base harvest quotas on sound, species-specific, scientific data.

³⁷⁴ Michael Paterniti, *Trophy Hunting: Should We Kill Animals to Save Them?*, NATIONAL GEOGRAPHIC (Oct. 2017), <https://www.nationalgeographic.com/magazine/2017/10/trophy-hunting-killing-saving-animals/#close>.

³⁷⁵ Amy Dickman, *Ending Trophy Hunting Could Actually Be Worse for Endangered Species*, CNN OPINION (Jan. 4, 2018), <https://www.cnn.com/2017/11/24/opinions/trophy-hunting-decline-of-species-opinion-dickman/index.html>.

³⁷⁶ Peter A. Lindsey, et al., *The Trophy Hunting of African Lions: Scale, Current Management Practices and Factors Undermining Sustainability*, PLOS ONE 1 (Sept. 18, 2013).

³⁷⁷ *See id.* at 2.

³⁷⁸ *See id.* at 3.

³⁷⁹ *See id.* Trophy hunting has been accused of leading to “unnatural selection,” which Alexander Simon attributes to hunters’ intent to claim the largest of a given species as a trophy, thus depriving a population of strong breeding adults. Alexander Simon, *Against Trophy Hunting: A Marxian-Leopoldian Critique*, 68 MONTHLY REVIEW 17 (Sept. 2016). Yet, a well-designed sustainable harvest program could incorporate regulations and quotas to prevent the types of consumer behaviors which would harm a wildlife population.

Both CITES and the ESA have provisions already in place, albeit limited ones, to allow sustainable breeding, captivity, and sale of endangered and threatened species.³⁸⁰ The ESA exempts from its provisions certain “fish or wildlife which was held in captivity or controlled environment.”³⁸¹ CITES also allows for breeding in captivity.³⁸²

Sustainable harvesting, done properly, can reap incredible benefits for the long-term survival and viability of endangered species, limit the economic incentives for poaching, and provide economic benefits to local communities which protect their natural resources. Through study of the successful sustainability programs described in this article, as well as critiques of less successful programs, certain necessary elements of a sustainability program become apparent.

i. Science-Based Standards

A successful sustainable harvest program must be designed around sound scientific and economic data. Without sound scientific data, the permitted harvesting may over-estimate harvesting thresholds in ways that limit a species’ ability to survive, thrive, or reproduce. Conversely, without sound economic data, harvesting caps may be set too low to meet anticipated demand and fail to stem illegal trafficking.

Science-based harvesting quotas should be developed for each stage of a species’ life cycle and for the population as a whole. At a minimum, harvesting quotas should take into account the estimated number of the species remaining (particularly when the harvesting involves killing members of the population); the species’ reproductive cycle, so that harvesting is not done at too young an age or in a manner in which too many reproductive adults are killed; the role of dominant males or females in the population (to ensure such dominant population members are not harmed; and the stress of harvesting on the population, particularly with regard to seasonal stresses (for example, a need to maintain fur during cold seasons or antlers during mating season)). In developing these quotas, the preeminent concerns should be to ensure harvesting does not adversely affect the population as a whole, and in fact, that any adverse effect on a wildlife population is significantly less than the anticipated population rebound. Such quotas should be reviewed and adjusted on an annual basis to ensure they are properly calibrated to maintain steady population growth.

Standards should also be developed with regard to treatment of the wildlife during its entire lifecycle and especially during harvesting periods. While humane treatment is most certainly an ethical concern, it also ensures continued health of a species population. Standards for sentient and captive beings should include

³⁸⁰ See Endangered Species Act, 16 U.S.C. §1538 (b)(1) (1973).

³⁸¹ See *id.*

³⁸² See 27 U.S.T. 1087.

sufficient space for movement and exercise, sanitary living conditions, and use of sedatives and anesthetics when extractions are conducted.

ii. Monitoring and Enforcement

With the end goal of overall population rebound in mind, a sustainable harvesting program must impose robust record-keeping requirements on the farmer, rancher, or other purveyor of wildlife, as well as regular monitoring by unaffiliated officials. This record-keeping should include life-cycle information, such as births or sprouts, dates of reproductive maturation, dates of harvesting and results of such harvesting, and population numbers. Such reporting will ensure that quotas are not exceeded and allow the regulators to determine on an annual basis if quotas should be adjusted.

Vigorous and constant supervision and enforcement by well-trained and well-equipped officers is also necessary. Even the best drafted regulations may be disregarded if there is not constant oversight and enforcement. Thus, rangers will be needed both to continue their fight against poachers and to supervise sustainable harvesting operations. Prosecutors and judges will also need training on the legal requirements of sustainable harvesting and consequences for violations.

International resources, such as those offered through the ICCWC, are available to assist countries around the world with training and enforcement efforts to preserve wildlife species.³⁸³ Current no-trade regimes fall prey to illegal trafficking due in part to low-penalty laws and lack of regular enforcement and prosecution. To avoid similar pitfalls, a sustainable harvesting program must include regulations drafted with strong enforcement mechanisms and penalties for violations.

iii. Community Engagement

A sustainability program will be most successful when the regulators and the community both recognize its benefits. It is important to consult and communicate with local communities and involve these communities as much as possible in the design of a sustainability program. Local communities know the land, the habitats, the pressures upon local species. They also know the threats posed to local species. These residents can lead the sustainability program through active involvement and support or undermine it through poaching and habitat encroachment.

It is not enough for regulators to set up a sustainability program and then allocate some percentage of profits to designated communities. Such a heavy-handed approach does not actively involve the local community in designing and

³⁸³ See *Tools*, CITES, <https://cites.org/eng/prog/iccwc.php/Tools> (last visited June 30, 2019).

participating in the program. Such exclusion would waste the knowledge and experience of the local community with regard to the wildlife needs and threats. It would also ignore community concerns. For example, if a community has historically relied on bushmeat for sustenance and trade, some level of continued hunting rights should be incorporated.³⁸⁴ If the protected wildlife causes harm to local livestock or farms, infrastructure such as walls or fences should be installed. Such wildlife concerns are best addressed through working with the local residents.

Further, individual employment opportunities within a sustainability program can be as great a value as a single disbursement of funds to a community. While the community may build infrastructure with such profits, employment allows individual families to grow and thrive, thus increasing personal incentives to protect the natural resources.

It is also important to define the term community broadly, to include both international conservationists and end-users. The scientific expertise, conservation experience, and funding of the international conservation community can be vital in establishing a well-designed and well-implemented sustainable harvesting program. These resources are particularly necessary in countries with a poor history of wildlife management and countries which lack sufficient financial resources to shoulder the initial investment required of a large-scale sustainable harvesting plan.

Anticipated end-users of the wildlife should also be consulted to design a program which accommodates the international market demand without waste. For example, if a plantation of rosewood trees is to be developed for international export as material for furniture, it is important to consult the wholesale and retail buyers to ascertain the preferred age, size, and even seasons for harvesting. Cooperation of international buyers is the keystone to a successful sustainable harvesting program. These buyers will provide the funds which can finance population-wide conservation efforts. In many cases, these purchasers will also

³⁸⁴ The Galana Ranch in Kenya, owned in the 1960s and 1970s by American Martin Anderson, was an early example of the potential success of sustainable ranching and hunting with active involvement from the local community. To discourage illegal hunting of elephants, rhinos, lions and other wildlife by local tribes, Mr. Anderson employed local residents and allowed bushmen to hunt for sustenance within agreed-to sustainable numbers. The community had legal access to the bushmeat and the ranch had assurances that the hunting would be limited. This preserved much of the biodiversity and also enabled Mr. Anderson to sell lucrative hunting rights to international tourists. During this decade-long sustainability program, over 6,000 elephants were conserved. However, when Kenya banned hunting in 1977, over 5,000 of the elephants were illegally killed soon thereafter. Galana demonstrates that when sustainable hunting was legal, it enabled the rancher to profit, locals to obtain necessary food supply, and wildlife to be conserved. Yet, when the commercial value of the wildlife was removed, the animals perished, thus proving the African axiom, "if it pays, it stays." Terry Anderson, *How Hunting Saves Animals*, HOOVER INSTITUTION (Oct. 29, 2015) available at <https://www.hoover.org/research/how-hunting-saves-animals>.

be the decision-makers as to whether to continue to purchase from, and therefore support, illegal traffickers or to purchase only the legal and sustainable products.

iv. Investment of Profits in Conservation

The point and purpose of sustainable harvesting is to generate much-needed funding to fund conservation efforts. Conservation is extremely expensive and perpetual work. Reliance on just the funding allocated by the governments of range counties, with some infusion of international largess, is insufficient to finance all of the resources necessary for a successful conservation effort. This is a financial reality that most critics of sustainable harvesting forget or ignore: conservation requires immense investment of capital on an ongoing capacity.

A secure stream of income must come from a reliable and sustainable source. Studies indicate that over US \$68 million was generated in revenue from legal hunting in South Africa in 2012.³⁸⁵ In Tanzania, it was US \$56 million.³⁸⁶ In Botswana, it was US \$40 million.³⁸⁷ These numbers sound extensive but it is important to keep in mind that the expense of monitoring and protecting multiple species and habitat over millions of acres is extensive too. Land preservation, infrastructure, equipment, guards, and enforcement officers are all necessary facets of a wildlife management plan. The money to sufficiently fund such investments can be provided through sustainable harvesting.

Governments with sustainability programs can ensure that funds are made available for reinvestment into conservation efforts in a number of ways, including taxes on commercial profits, taxes on the export of wildlife products, fees for land leases and permits, or even directly running the sustainability program and allocating a percentage of the profits to conservation efforts. In addition to ensuring wildlife populations reap the benefits of sustainable harvesting, governments should also keep in mind the financial needs of the private enterprises and local communities. Ranchers, farmers, and other private sustainable harvest operators need to generate sufficient profits to remain in business. Thus, taxes and fees should not be set prohibitively high. It is also important to ensure a stream of revenue or share of profits to local communities to ensure ongoing support for the sustainability program. Profits can be used by local communities to construct schools, hospitals, roads, and other needed facilities. Sustainable trade can also provide employment opportunities for local residents, such as rangers or tour guides. These community-wide and individual benefits encourage local residents to protect their natural resources and aid in the fight against illegal trafficking.

³⁸⁵ See Enrico Di Minin, et al., *Banning Trophy Hunting Will Exacerbate Biodiversity Loss*, 31 TRENDS IN ECOLOGY & EVOLUTION 99 (Feb. 2016).

³⁸⁶ See *id.* at 100.

³⁸⁷ See *id.*

v. Reservations

The regulatory authority must reserve rights to adjust quotas and even impose moratoriums if any aspect of a sustainable harvest program indicates that harm is being caused to the overall species population. Such reservation can be stated in the applicable regulations or accomplished through provisions in land leases, permits, and other commercial documentation. However, any such reservations should be designed to allow a tailored approach to correcting the quotas or other program concerns. Constancy and assurance to international buyers that a sustainable harvest program will be a reliable and ongoing source of product is necessary to redirect purchasing away from illegal suppliers. Therefore, a complete moratorium on harvesting, sale, or export should be a tool of last resort.

PART VI: CONCLUSION

It is highly concerning that research indicates that more than half of the purchasers of illegally trafficked wildlife intend to purchase more illegal wildlife goods in the future.³⁸⁸ Public awareness campaigns are important toward steering the general public away from wildlife products but have had limited effect on those who have already engaged in illegal wildlife purchases.³⁸⁹ Many of these purchasers avoid moral or ethical concerns by viewing themselves as disconnected from the actual killing, rather than the reason for the killing.³⁹⁰ For such purchasers, only strict law enforcement and substantial penalties will curb their purchasing habits.³⁹¹ As discussed above, there are many countries which are members of CITES and may even have their own “no-trade” laws on the books, but fail to seriously prosecute or penalize illegal wildlife trade. Thus, extensive international illegal trade continues to flourish.

Also concerning is that under the current “no-trade” regime, predominant in much of the world, most significant enforcement occurs through massive seizure and arrest operations—after the flora has been harvested or the fauna has been killed.³⁹² Thus, despite law enforcement’s best efforts, the wildlife is gone forever.

A different approach is desperately needed to prevent the loss of more endangered species to illegal wildlife trafficking. Traditional tools certainly still have a role to play: vigorous enforcement and prosecution of lawbreakers; better training and equipping of law enforcement, customs, and judicial officers; crackdowns on official corruption, and public awareness campaigns to lessen demand for wildlife and wildlife parts. Yet, organized crime stands to earn billions of dollars per year because the demand for wildlife products far outweighs the

³⁸⁸ See USAID VIETNAM, *supra* note 30, at 34; USAID CHINA, *supra* note 59, at 20.

³⁸⁹ See *id.*; NUWER, *supra* note 8, at 207-08.

³⁹⁰ See USAID VIETNAM, *supra* note 30, at 21.

³⁹¹ See *id.* at 41-45.

³⁹² See *Corruption and Wildlife Crime*, *supra* note 22.

supply and thus top dollar can be demand for wildlife and parts. As long as this economic situation remains unchanged, the international trafficking in stolen wildlife will continue.

It is vitally necessary to convert the billions of dollars in profits which organized crime earns from illegal wildlife trade into legal profits for local governments and communities, profits which can be reinvested into wildlife conservation and protection efforts.³⁹³ It is time to legalize sustainable farming and harvesting of endangered and threatened species. Such legal trade should be regulated and supervised to ensure sustainable and humane treatment of the wildlife and a return on investment for local communities. Elements for a successful sustainable harvesting program are set forth in this article. With such a framework in place, sustainable harvesting can become the cornerstone of wildlife survival by growing endangered populations and reducing demand for illegally trafficked wildlife.

At the international level, sustainable trade will require CITES' Conference of the Parties to amend the Convention to allow such trade. This would most easily be accomplished by adding a fourth appendix, one which would designate species which are deemed appropriate for international sustainable trade under specified conditions. However, since major amendments to the treaty require a vote of the Conference of the Parties, significant political will would need to be harnessed to implement such a change.³⁹⁴ Like the other appendix listings, such determination would be based upon scientific and economic review of the designated species to ensure that sustainable harvesting would benefit that population's overall survival.

At the domestic level, countries which seek to allow sustainable harvesting within their borders can also establish regulatory programs, such as created by Peru for the vicuña and the United States for the American alligator, which identify certain species for sustainable harvesting. Such sustainable harvesting programs should be founded upon scientific and economic studies demonstrating that sustainable harvesting would benefit the species' overall survival and include standards for healthy and humane breeding, care, harvesting, and trade of the species.

The worldwide community cannot continue to expect range countries to foot the bill for wildlife protection without sufficient financing to fight organized crime. Through implementation of well-designed sustainable harvesting programs, funds will be made available to retain and train wildlife and customs officers, purchase cutting edge technology, and obtain all of the tools necessary to fight traffickers and pull vulnerable species back from the brink of extinction.

³⁹³ UNITED NATIONAL OFFICE ON DRUGS AND CRIME, ENHANCING THE DETECTION, INVESTIGATION AND DISRUPTION OF ILLICIT FINANCIAL FLOWS FROM WILDLIFE CRIME 32 (2017).

³⁹⁴ CITES art. XVII.