

POLICY BRIEFING

State of the Apes

Killing, Capture, Trade and Conservation



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Content developed from *State of the Apes: Killing, Capture, Trade and Conservation* by Edelman

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Introduction

The *State of the Apes* series examines threats to the conservation of all non-human ape species, namely bonobos, chimpanzees, gibbons, gorillas and orangutans, as well as their habitats (see Annex I). Volumes 1, 2 and 3 in the series focused on extractive industries, industrial agriculture and infrastructure development, respectively.

Volume 4 addresses the killing, capture and trade of apes, which spans trafficking of live apes, human consumption of wild meat, and various uses of ape body parts. The hunting of wild apes for these uses severely impacts the viability of populations, in addition to the resilience of ecosystems where they are found. The trade also raises concerns over disease transmission between humans and apes, as well as ethical questions about the welfare of rescued apes.

The killing, capture and trade in apes is driven by the availability of weapons, food insecurity, lack of livelihood options, opportunism linked to economic factors, poor governance and proximity. The expansion of industry and infrastructure near ape habitats and the ubiquity of online platforms enable the trade. Ape trafficking can be further perpetuated by cultural belief systems and perceptions about socioeconomic status linked to consumption, possession and use of apes and ape products.

This document summarizes key findings from *State of the Apes* Volume 4 and presents policy recommendations for stakeholders striving to achieve the best possible balance between ape conservation, economic development and social issues. As ape trade is complex and spans local, national

and international scales, stakeholders are called upon to undertake interventions at every point along the trade chain.

Recommendations include developing effective domestic legal frameworks, imposing sanctions that deter criminal activity, supporting international policy frameworks and ensuring that regulations safeguard captive ape welfare. Additionally, stakeholders should strengthen targeted law enforcement along the trade chain, particularly in transport and consumer markets. They must also regulate private sector actors, such as industrial developers, and close online markets that are being used to facilitate wildlife trafficking.

Further, it is essential to engage communities and ensure that they benefit from ape conservation, which requires understanding of cultural contexts and provision of economic incentives. Also, stakeholders should work to reduce demand for illegal products in domestic and international consumer markets using awareness-raising, behavior change strategies and education.

Overview of the Ape Trade

Killing, Capture and Trade

The killing, capture and trade of wild apes have direct negative impacts on the conservation status of their populations. Hunting has escalated to become a key determinant of apes' survival in the wild (Brockelman and Geissmann, 2019). While the drivers of the ape trade, and its



Wild meat hunting, consuming and trading are integral to rural society in the tropics. Western gorilla feet and hands await smoking, giving suppliers time to get them to market
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solutions, share many similarities with trade in other species of wildlife, the killing and capture of apes is of particular concern due to the animals' sentience, complex social relationships, and close genetic relatedness to humans. Many ape populations have declined substantially in recent decades, and now exist only in small, fragmented groups. It is very difficult for an ape population to recover from losses, as species have low reproductive rates and births are widely spaced (Cheyne, 2010; Furuichi *et al.*, 1998; Sugiyama and Fujita, 2011).

All ape species, except the eastern hoolock gibbon, are categorized as “endangered” or “critically endangered” on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. In recognition of their fragile status, apes are afforded protection by the Convention on International Trade in Endangered Species of Fauna and Flora (CITES). This global treaty prohibits any international trade in apes by listing all species in its Appendix I. Domestic protections are regulated by individual state governments, and vary in detail among range states, but the hunting of apes is illegal in all range states (Meijaard *et al.*, 2010b).

In this document, the terms hunting and poaching are used to mean both the killing of apes, whose products may or may not end up being traded, and the capture of animals from the wild for the live ape trade. Hunting is the first step in the illegal trade chain, which can involve live apes, ape meat or body parts from apes that have been killed. Activities in violation of national or international laws that take place along the illicit wildlife trade chain are also referred to in this document as trafficking.

The remainder of this section describes three types of ape trade—that in wild meat, body parts and live animals—all of which begin with hunting of apes in the wild (Coad *et al.*, 2019). It is unclear which form of trafficking poses the greatest threat to global ape populations, therefore all should be understood and addressed by policymakers.

Wild Meat Trade

The wild meat trade involves the killing of apes followed by the sale of fresh or smoked ape meat for human consumption. Ape meat is consumed within ape range states and is trafficked internationally as well. Domestic consumption of ape meat within range states is associated with availability, cost and taste preferences, and the ability to purchase it is linked to socioeconomic status, particularly in urban areas (Nijman, 2005). Internationally, where ape meat prices are significantly higher, consumption is linked to culture and a perception of prestige and status.

The hunting of wild animals for their meat is not unique to apes and occurs in many places around the world where wild animals are relied upon as a source of protein. In African markets, monkeys and apes rarely account for more than 20% of the wild meat on sale (Cawthorn and Hoffman, 2015; Robinson and Bennett, 2004). In Southeast Asia, apes and gibbons are sometimes specifically targeted for their meat, but less information is available about this market and the quantities consumed (Harrison *et al.*, 2016; Stokes, 2017).

Trade in Body Parts

Trafficking of ape body parts follows a similar trade pattern to wild meat hunting. Supply chains start in the forest with hunters who supply dealers involved in smuggling products to their final destinations domestically or internationally (Brown, 2006). Domestic use of ape body parts is often linked to belief systems. In some places, for example, possession is believed to convey protection, have healing powers or provide strength (CITES and GRASP, 2006; Nforngwa, 2017; Zhou *et al.*, 2005). Internationally, there are indications that ape parts, such as skulls, are prized as trophies and that ape bones are in demand for use in traditional medicine (Nforngwa, 2017). The scale of the trade in ape body parts is not well documented, but observations by the Last Great Ape Organization show evidence of increase interest in products. For instance, in 2015, an estimated 900 ape skulls were trafficked in Africa (Clough and May, 2018).

Live Ape Trade

The illegal capture of living wild apes typically targets infants to be sold in domestic or international markets. The live ape trade is driven by demand for apes to be displayed in exhibits, kept as exotic pets or used as performers (Clough and May, 2018; Greengrass, 2015). Destinations include circuses, private homes, wild animal parks and zoos, and training facilities that service entertainment industries including advertising, film, marketing and television. Trafficking of live apes involves a complex illicit chain of activities that can include the counterfeiting of fraudulent permits or concealing apes among legal animal shipments (Stiles, 2016). Smugglers are also known to use charter, commercial or private aircraft to facilitate the live ape trade (Stiles, 2016).

As live ape trafficking attracts global media attention, it is better understood than other forms of trade, and greater efforts are being made to address it (Shukman and Piranty, 2017). The number of apes in sanctuaries and records counting those confiscated from the illegal trade help inform estimates of the scale of the problem (Stiles *et al.*, 2013). Between 2005 and 2011, for example, researchers believe that at least 3,000 great apes were removed from the wild each year. Of those, chimpanzees made up an estimated two-thirds of the yearly take. As chimpanzees have the largest population and widest distribution of the African apes, they are most impacted by hunting for capture. Additionally, it is estimated that at least 500 orangutans, 400 gorillas and 150 bonobos were captured annually, based on research. However, given the clandestine nature of ape killing, capture and trade, it is likely that research has underestimated the real totals.

The number of apes taken alive represents only a fraction of the impact that this form of trade has on ape populations, however. As the live trade targets young animals, the collateral impact on targeted ape communities is likely much higher. For every individual ape captured, many more were likely killed in the process, as most apes form strongly bonded social groups and removing infants will involve the killing of adults trying to protect them.



From around 1990, the use of orangutans became widespread in both tourist and entertainment shows in Thailand. One online ad for an orangutan “boxing show” still promises visitors comical acts in which apes in boxer outfits “dazzle” audiences “with their mathematical gifts.” In late 2003, DNA tests showed that more than half the orangutans at Safari World had been smuggled from Indonesia. Safari World. © PEGAS

Scale and Impact

As ape habitat is predominately remote forest, often with limited law enforcement or environmental monitoring capacity, the full impact of ape killing, capture and trade is difficult to quantify. Evidence indicates that demand for apes and ape products has increased recently, which has driven more hunting, and resulted in negative impact on ape populations (Meijaard *et al.*, 2010b; Spehar *et al.*, 2018; Stiles *et al.*, 2013; Turvey *et al.*, 2018). Across Asia and Africa, more than an estimated 22,000 great apes were killed or captured to supply the illegal wildlife trade in the period between 2005 and 2011 (Stiles *et al.*, 2013). In 2015–16, rescue centers in Southeast Asia held 747 gibbons, which provides a small window into the trade in these species (Kheng *et al.*, 2017; Nijman, Yang, Martinez and Shepherd, 2009; Smith *et al.*, 2018).

Hunting as a Threat to Ape Viability

The primary direct impact of ape hunting is a decline in the populations of affected groups, which can result in local extinctions (Tranquilli *et al.*, 2012). In addition to the immediate death of individuals or the removal of individuals from the

wild, hunting can also result in injuries to those remaining. Injury can reduce an ape’s breeding success, lifespan and psychological well-being. Groups of gorillas and other African great apes can also experience social impacts from hunting. For example, the killing of a silverback male gorilla can trigger infanticide and group disintegration (Kalpers *et al.*, 2003; Robbins *et al.*, 2013; Watts, 1989).

Ape survival in the wild can be influenced by the scale of hunting affecting a population (Brockelman and Geissmann, 2019). Even low hunting pressure can lead to catastrophic population declines among apes as they have slow life histories and low reproductive rates (Cheyne, 2010; Furuichi *et al.*, 1998; Sugiyama and Fujita, 2011). Research shows that the viability of an ape population can be impacted by any increase in the number of deaths (Carlsen *et al.*, 2012; Fan *et al.*, 2013; Smith *et al.*, 2018; Turvey *et al.*, 2015). A viability analysis conducted for western chimpanzees, for instance, determined that populations of fewer than 100 individuals had at least a 50% chance of extinction over the next 100 years if they experience even a 3% annual loss of individuals (Carlsen *et al.*, 2012). Eventually the affected populations will reach a threshold below which inbreeding, reproductive collapse and extinction become inevitable.

Ecosystem Impacts

As large, forest-dwelling mammals, apes can serve as indicator species for the broader health of the ecosystems they inhabit and provide umbrella effects for biodiversity at large. Great apes, in particular, are efficient dispersers of large seeds (>1 cm), which are not easily dispersed by smaller animals, and they can limit the reproduction of flora, helping to keep natural systems in balance (Leighton, 1993; Tutin *et al.*, 1991). Apes are also rare and iconic ambassadors for nature that attract high levels of global interest, which can help inspire broader environmental protection. Safeguarding apes benefits their habitats, the other wildlife within those habitats, and the ecosystem services provided to people by nature.

The tropical forests that harbor apes are critically important sources of food, medicine, shelter and water for indigenous people and other local communities. Furthermore, these forests maintain rich biodiversity and sequester carbon, which is essential for the well-being of all humanity. While the long-term impacts of removing apes from forest ecosystems is not fully known, scientists anticipate that their disappearance could reduce plant diversity and change the structure of habitats (Beaune, 2015; Nuñez-Iturri and Howe, 2007; Petre *et al.*, 2013). Further, increased human presence in forests heightens the risk of introducing non-native species, which can threaten ecosystems (Karesh *et al.*, 2005; Nijman, 2010; Westphal *et al.*, 2008).

Disease Transmission

Given the genetic similarities between humans and wild apes, any contact between them is dangerous for both. As pathogens from humans can be fatal to apes, transmission poses a threat to the conservation of wild populations (Dunay *et al.*, 2018). Similarly, live apes and ape carcasses are capable of transmitting zoonotic pathogens to people. Infectious disease epidemics, such as viruses associated with respiratory illnesses, Ebola and AIDS, have originated with apes (Hahn *et al.*, 2000; Hoppe *et al.*, 2015; Richard *et al.*, 2016). As witnessed during the global COVID-19 pandemic, zoonotic pathogens from apes and other wild animals pose a severe and global threat to human health (Gillespie, Nunn and Leendertz, 2008). Keeping apes in the wild and distanced from humans is essential for their physical safety as well as the safety of people around the world. The fifth volume of the *State of the Apes* series will examine ape health, including disease transmission, in detail.

Ethical Considerations

The live ape trade raises ethical questions in regard to the handling of individuals that have been rescued or confiscated from trafficking. Most species of apes cannot be easily or safely returned to the wild after habituation to humans and exposure to human pathogens. At the same time, it is not ethical or legal to euthanize apes, except those that are suffering from an incurable disease or extreme pain. Therefore, the most ethical approach is to care for captive apes

BOX 1 Knowledge Gaps

Given that detailed, long-term monitoring studies on the impact of killing, capture and trade are rare, in relation to apes, gaps in information represent a major constraint to policymaking (Booker and Roe, 2017; Rovero *et al.*, 2015). Consequently, evidence remains limited on the relative effectiveness of different strategies being implemented to safeguard apes from hunting.

To understand the full impacts, scale and underlying drivers of ape killing, capture and trade, it is necessary to invest in additional data collection and analysis. Scientists and researchers from non-governmental organizations (NGOs), foundations and academia should increase the resources they dedicate to monitoring the impact of interventions. Governments can support these efforts by enabling access to ape habitats and encouraging relevant ministries to collaborate with those leading studies. As new research is published and additional knowledge becomes available, it should be used to inform decision-making and the development of ape conservation strategies.

humanely until reintroduction into the wild can be facilitated, if possible. When reintroduction is not possible, apes must be provided with high quality and compassionate care for the duration of their lives. As most ape sanctuaries are at capacity, and are expensive to manage responsibly, greater support and resourcing for captive ape welfare is an ethical imperative.

Drivers

Poor Governance and Availability of Weapons

Where corruption is rampant, law enforcement is inadequate and political will is lacking, ape trafficking can thrive. Limited awareness about laws and penalties that are insufficient to deter, combined with unhindered access to markets, also foster ape killing, capture and trade (Harrison *et al.*, 2015). In areas of weak governance, officials may be susceptible to bribery, have insufficient resources to enforce laws or be reluctant to arrest powerful and well-connected perpetrators (Lindsey *et al.*, 2012; Rodriguez *et al.*, 2019). The seriousness of wildlife trafficking should not be underestimated as it has been connected to organized transnational criminal networks with established smuggling routes for other illegal items, including drugs and firearms (Cook, Roberts and Lowther, 2002).

Sophisticated hunting tools and technologies, such as night vision and thermal devices, rifles and traps, and even helicopters, are used to hunt endangered wildlife (Coad *et al.*, 2019). While some apes are captured as a result of indiscriminate snares placed across wide areas to capture animals for subsistence hunting, most are killed deliberately using firearms (Fa, Ryan and Bell, 2005). As long-distance weapons, such as shotguns, have become available, the hunting pressure on apes has increased (Marshall *et al.*, 2006; Meijaard *et al.*, 2010a).



Both economic and geographic drivers have been associated with wild meat consumption, as the poorest communities consume most of the wild meat in rural areas and the wealthiest eat the greatest proportion in urban areas. Confiscated wild meat and parts, Lomé, Cameroon. © LAGA and The EAGLE Network

Food Security and Lack of Livelihood Options

Pursuit of profit is a significant driver of the illegal wildlife trade, and people living in areas with high unemployment or low incomes are more likely to participate (Duffy and St John, 2013; Duffy *et al.*, 2016; Harrison *et al.*, 2015). Limited economic opportunities and a lack of affordable alternative protein sources have been documented as contributing factors, as well as conflict, insecurity and lack of livelihood options (de Merode and Cowlshaw, 2006; Kümpel *et al.*, 2010).

Some households in ape range states rely on wild meat as their only source of animal protein (Hickey *et al.*, 2016). Apes are sometimes killed or maimed unintentionally when caught in snares set by subsistence hunters to trap other animals. As ape products are highly valued on illicit markets and can generate income, economic drivers often exist alongside the meeting of basic needs (Duffy and St John, 2013; Harrison *et al.*, 2015; TRAFFIC, 2008).

Proximity

As human populations grow and encroach further into ape habitats, people and apes are increasingly competing for the same resources and coming into conflict with one another

(Campbell-Smith *et al.*, 2010; Nijman, 2009; Stiles *et al.*, 2013; Utami-Atmoko *et al.*, 2017). Apes are known sometimes to raid agricultural crops that are planted in or near their ranges and cases have been documented of chimpanzees attacking and killing people, especially children (Hockings and Humle, 2009; Hockings and McLennan, 2012).

People sometimes hunt apes when they enter plantations or villages, to prevent or retaliate for crop raiding, in self-defense or out of fear for their personal or community safety (Ancrenaz, Dabek and O'Neil, 2007; Baker, MilnerGulland and Leader-Williams, 2012; Davis *et al.*, 2013; Meijaard *et al.*, 2011). This type of hunting occurs mostly in agricultural landscapes and non-protected forests. In these areas, involvement in the ape trade is often opportunistic rather than organized.

Expansion of Industry and Infrastructure

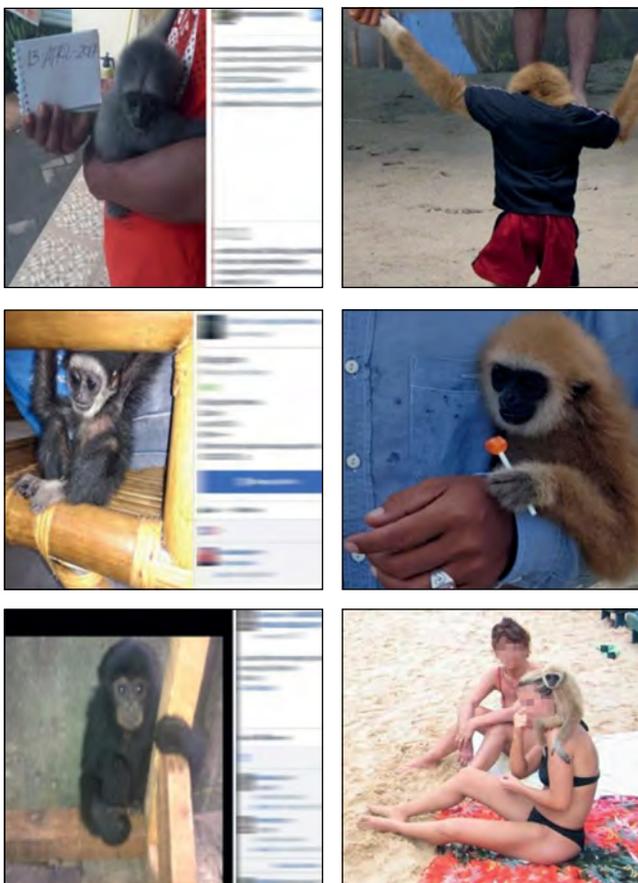
As documented in previous volumes of *State of the Apes*, apes are under a range of anthropogenic pressures some of which are linked to industrial agricultural conversion, infrastructure construction and oil and gas exploitation. The expansion of industry into ape habitats has direct impacts on apes, such as behavior change, disturbance, habitat loss, injury and mortality, as well as indirect impacts, such as dis-

ease, hunting and pollution, which result from increased human settlement. Industrial projects attract people seeking economic opportunities, and linear infrastructure networks facilitate their access to remote areas (Hickey *et al.*, 2013; Laurance *et al.*, 2008; Maisels *et al.*, 2013). Infrastructure also enables easier transportation of illicit products from remote forests to urban markets.

There is a strong and well documented correlation between human settlements drawn to once isolated areas by the influx of industry and infrastructure, and the hunting of wildlife (Auzel and Wilkie, 2000; Lanjouw, 2015; Poulsen *et al.*, 2009; White and Fa, 2014; Wilkie and Carpenter, 1999; Wilkie *et al.*, 2000). For ape populations specifically, abundance declines and density decreases in proximity to roads and human settlements owing to the hunting pressure that results from increased human access to ape habitats (Espinosa, Branch and Cueva, 2014; Fa, Ryan, and Bell, 2005; Hickey *et al.*, 2013; Kuehl *et al.*, 2009; Poulsen, Clark and Bolker, 2011). Additionally, human settlements in or near ape habitats also increase the risk of mortalities from human-ape conflict (Poulsen *et al.*, 2009).

Culture and Beliefs

Attitudes and behaviors toward wildlife differ between individuals and between communities. Apes are seen by some groups as holy animals, protectors, reincarnated ancestors



Gibbons for sale on social media (left) and as photo props for foreign tourists on Thai beaches (right). Sources: screenshots from 2017 and 2018

or totems (CCFU, 2018). In some locations, cultural or religious taboos forbid the hunting and sale of ape parts for consumption, ceremonial events, fetishes and traditional medicine. Further, the presence of researchers or law enforcement officers in some protected areas has served to discourage the use of ape products (Campbell *et al.*, 2011; Oates *et al.*, 2007; Tagg *et al.*, 2015).

In other locations, cultural beliefs and practices are known to drive the ape trade, although data specific to range states and international markets are limited. Many people use traditional medicine for remedies and cures for common ailments; for example, primate bones, likely including those from gibbons, are used to treat fevers and gonorrhoea in Lao People's Democratic Republic (Duckworth, 2008).

In Cameroon, a belief that ape parts have medicinal, ritualistic or even mystical properties and powers drives demand for their body parts. Similarly, a belief that consuming gorilla products imparts strength upon the recipient has given rise to the practice of burning and grinding gorilla bones to make a traditional tonic (Clough and May, 2018). Additionally, the use of ape totems has been documented in some areas of Cameroon, Central African Republic, the Democratic Republic of Congo, Gabon, Liberia, Nigeria, Tanzania and Uganda (Drani and Infield, 2014).

Status

In some places and cultural contexts, owning an ape as a pet or consuming ape meat is associated with high socio-economic status both within and outside of ape range countries. Ironically, wild meat is often consumed by the poorest communities in rural areas, but the richest people in urban areas consider it a luxury item to be served on special occasions to display wealth or impress guests (Brashares *et al.*, 2011). International demand is often linked to diaspora communities and wild meat exports have been documented in Europe, the United States, the Middle East and Asia (Chaber *et al.*, 2010; Clough and May, 2018). Consumption of ape meat outside of range states is likely to be at a lower level than is seen domestically (Brown, Fa and Gordon, 2007; Harris and Karamehmedovic, 2009). As developed urban areas have abundant access to alternative sources of protein, including supplies of domesticated meat products, wild meat is not essential to the food security of these urban consumers (Wilkie *et al.*, 2016).

Online Trade

In recent years, both legal and illegal wildlife trade activities have shifted away from traditional open markets to social media platforms and online forums (IFAW, 2008; 2014; Kramer *et al.*, 2017). These platforms enable traffickers to control access to forums, which can help them evade law enforcement (Krishnasamy and Stoner, 2016). Dealers and buyers are able to engage in private discussions online, which can be used to arrange illicit exchanges (Smith and Cheyne, 2017; Stiles, 2016). The use of closed groups and

password-protected forums makes it difficult to monitor the level of online trade in apes or to evaluate the threat it poses to populations (IFAW, 2014; Krishnasamy and Stoner, 2016).

Despite these challenges, the sale of apes has been documented on both open and closed social media platforms (Hastie and McCrea-Steele, 2014; Phassaraudomsak and Krishnasamy, 2018; Stiles, 2016). For example, an investigation that took place in 2018 uncovered 11 Instagram accounts and 10 Facebook groups that featured advertisements for gibbons originating in Indonesia and Malaysia (Cheyne, n.d.). Between April and June 2018, 40 advertisements for gibbons were documented, and in December 2018, 46 advertisements were recorded. Similarly, a 2014–15 study found advertisements on social media for more than 300 individual wild animals from approximately 80 different species, including gibbons and other protected wildlife (Krishnasamy and Stoner, 2016).

Social media further perpetuates ape trafficking through the popular practice of posting “selfies” taken with wildlife, such as young gibbons. Photographs of tourists with captive apes flaunts laws meant to protect the animals, fuels demand for their capture from the forest and normalizes the behavior (Malone *et al.*, 2003).

Policy Recommendations

Develop Effective Legal Frameworks

Domestic Legal Frameworks

All apes are offered some legal protections under the national laws of their home range states, but legal intelligence firm Legal Atlas found that there are many gaps that need to be filled in order to guarantee full protection for apes. From the firm’s examination of the legal frameworks in 17 ape range states, Legal Atlas identified weaknesses related to processing, transporting and storing wild animals, as well as advertising, exhibiting, possessing and caring for their welfare (Legal Atlas, n.d.). Weak and ineffective legal frameworks allow traffickers, particularly those in the middle and high levels of the trade chain, to operate their lucrative illicit business with low risk of detection, arrest, prosecution or punishment (Clough and May, 2018).

Legal Atlas suggests that enforcement opportunities would increase if all apes, including native and non-native species, were included on all countries’ domestic lists of protected wildlife. Species should be listed as protected in countries where they are not native so that more can be done to stop them from being trafficked across borders. In most jurisdictions, being listed ties species to multiple pieces of legislation that regulate parts of the trade chain and impose restrictions, such as bans or requirements for licenses or permits (Legal Atlas, n.d.). In addition to listing all apes as protected species, policymakers should explicitly criminalize all domestic and foreign trade, possession and use of wild apes or ape products. Legal frameworks should address poaching,

transport, storage, exhibition, experimentation, advertising and welfare (Legal Atlas, n.d.).

To combat trafficking in apes and other species, an integrated and comprehensive suite of policy, legal and enforcement tools is required that addresses all players involved. As the illicit ape trade is global in scope and comprises a complex array of individual criminal acts, all countries should undertake a review of their national legal and regulatory frameworks as a first step toward improvement. Given links between wildlife trade and other sophisticated criminal enterprises, it should be recognized as a core governance concern, not treated as merely a conservation matter (Robertson, 2017).

Establishing effective legal frameworks requires a range of actions, and implementation hinges on cooperation between relevant authorities (Roe and Booker, 2019). To start, policymakers should adopt robust legislation that holds violators accountable for their criminal acts regardless of whether they were conducted lower down or higher up the trade chain. Next, it is necessary to strengthen targeted law enforcement and the criminal justice system in order to investigate and prosecute wildlife crimes successfully. Also, penalties for those convicted must be strong enough to serve as an adequate deterrent to others. The United Nations Office on Drugs and Crime (UNODC) offers policymakers detailed guidance on drafting national legislation that protects wildlife by criminalizing serious offences and by enabling their prosecution through the justice system (UNODC, 2018).

Legal Sanctions

To deter criminal intent and limit opportunism, law enforcement entities must increase the effort required to commit wildlife crimes and heighten the likelihood of perpetrators getting caught (Clarke, 2009). At the same time, rewards generated by the crime must be reduced and the associated risks increased. To achieve this, policymakers should consider a suite of consequences including asset forfeiture, imprisonment and monetary fines.

To determine the appropriate fine for a crime, the Organisation for Economic Co-Operation and Development (OECD) offers three general guidelines. First, the fine should be higher than the perceived benefit of the criminal activity. Second, it should eliminate financial gain by corresponding to the market value of the trafficked goods. Third, the fine should be proportional to the harm caused (OECD, 2009).

While no global consensus exists regarding the length of prison sentences for wildlife offenses, the United Nations Convention Against Transnational Organized Crime (UNTOC) recommends that policymakers treat trafficking of endangered species as a serious crime (UNGA, 2000). Similarly, in 2015, the United Nations General Assembly (UNGA) passed a resolution calling on member states to consider these offenses as serious crimes (UNGA, 2015). Under UNOTC guidance, a perpetrator convicted of a serious crime should face a minimum of four years’ imprisonment. Although most UN member states did not impose four-year sentences for wildlife crimes

prior to the 2015 resolution, they are urged to do so as a necessary deterrent to traffickers (UNODC, 2016).

Corruption is of particular relevance in relation to great apes and undermines the effectiveness of legal frameworks (CITES, 2019). Organized criminal enterprises are known to exploit officials from the corporate sector and from government (Legal Atlas, n.d.). For example, a report from The New York Times documented government officials falsifying wildlife trade permits (Gettleman, 2017). Legal Atlas recommends that higher penalties be imposed for offenses that involve aggravating circumstances, corrupt officials, highly valued illicit trade, repeat offenders or transnational networks. Further, criminal sanctions should include the termination of officials from their positions (Legal Atlas, n.d.). UNODC guidance is available for policymakers seeking to root out corruption from wildlife management authorities (UNODC, 2019).

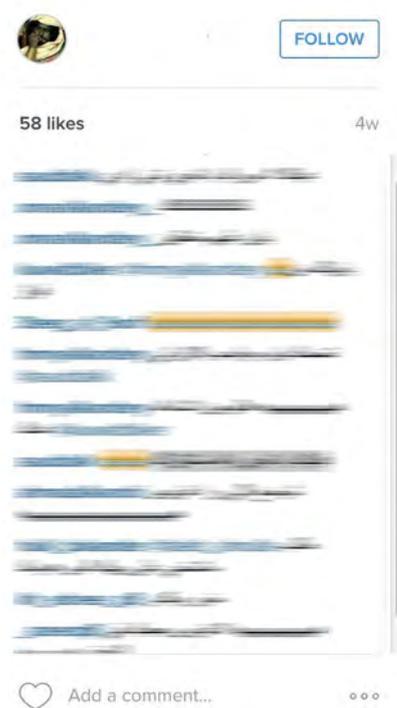
International Policy Frameworks

While wildlife trade that occurs domestically is regulated by national legislation, such as wildlife management acts and forest laws, international trade is regulated by the United Nations Convention on International Trade in Endangered Species of Fauna and Flora (CITES). All ape species are listed in CITES Appendix I, meaning that international trade is illegal. Other intergovernmental organizations that regulate the trade in apes outside their country of origin include UNODC, the World Customs Organization (WCO), INTERPOL and the Great Apes Survival Partnership (GRASP). Unfortunately, the effectiveness of these organizations in stopping international trafficking in apes is encumbered by a shortage of resources. Most of them are dependent on external funding rather than

a core budget to carry out wildlife crime prevention activities. Governments, NGOs and foundations should help address this problem by directing financial support to the organizations and offering technical expertise on collaborative initiatives.

At the 18th meeting of the Conference of the Parties to the CITES treaty, member states passed a resolution on the conservation of and trade in great apes, noting the species' special cultural, ecological and scientific importance as humanity's closest living wild relatives as well as their protected status. The resolution expresses concern that wild populations of all great apes are threatened by the combined effects of poaching and other human activities, which are resulting in drastic population declines. To help reverse this trend, state parties are urged to implement national legislation that prohibits all international commercial trade in great apes, including the acquisition, display, purchase or sale of wild-caught animals (CITES, 2019). Additionally, the resolution urges state parties to strengthen law enforcement efforts, such as anti-poaching and anti-smuggling measures, and to adopt penalties that deter illegal trade. When great apes, their meat or body parts are confiscated, state parties should use forensics to establish the range state of origin and contribute to databases maintained by CITES, GRASP and IUCN.

The resolution also recognizes the need for international support to great ape range states and calls on the international community to assist as a matter of urgency. Specifically, governments, intergovernmental organizations, international aid agencies, NGOs and donors are asked to assist with enforcement, training, capacity building and education initiatives, develop projects that benefit communities living near ape habitat, monitor great ape populations, mitigate human-wildlife conflict, offer scientific, technical and legal expertise,



When a great ape or gibbon is taken illegally from the wild, it is important that all consecutive actions also be expressly prohibited by law, from transportation, through storage, processing, exhibition, experimentation, advertising, domestic and foreign trade, use and possession. Screenshot courtesy of PEGAS.

BOX 2**The Wildlife and Forest Crime Analytic Toolkit**

The International Consortium on Combatting Wildlife Crime (ICCWC) is a joint initiative of five intergovernmental organizations that supports criminal justice systems in order to advance wildlife and forest crime prevention. ICCWC partners are CITES, INTERPOL, UNODC, World Bank Group and WCO. Partner organizations offer government agencies approximately 30 different capacity building courses and five operational support services, as well as a suite of resources, tools and training programs (ICCWC, 2018).

ICCWC's Wildlife and Forest Crime Analytic Toolkit provides policymakers with implementation guidance spanning legislation, enforcement, judiciary and prosecution, drivers and prevention, as well as data and analysis (UNODC, 2012). These elements overlap and cannot be isolated from one another. An effective national response to wildlife and forest offenses requires a coordinated and multisectoral approach including participation of all relevant stakeholders. The toolkit provides a framework for developing prevention and response strategies and includes a collection of resources that can be assembled in various combinations to suit a country's unique needs. It presents the key issues to be examined, including root causes of crime, administrative preventive measures and criminal justice system responses.

Using the toolkit, policymakers are equipped to undertake a comprehensive analysis of national wildlife management, law enforcement, judiciary and prosecuting systems and capabilities. It also enables greater understanding of the actors within the wildlife crime trade chain and the driving factors behind it. Policymakers can then use the toolkit to design interventions or to identify gaps and areas where training or technical assistance is needed to detect or deter offenses.

provide funding and restore and manage habitats (CITES, 2019). While these recommendations are specific to great apes, they are applicable to all ape species.

Captive Ape Welfare

The possession of wild apes as pets, their use in entertainment and their display at poorly managed zoos and wildlife parks puts their welfare at risk. Stronger ape welfare regulations, and enforcement of those regulations, would help protect these vulnerable species from physical and psychological abuse or neglect. Additionally, global zoological associations with expertise in ape care should partner with regulatory bodies to provide resources to support the welfare of apes in sanctuaries and guidance on topics such as preventing hybridization and reducing fetal and infant mortality rates. Ensuring the welfare of captive apes, which are highly intelligent beings closely related to humans, is an ethical obligation.

As previously discussed, sanctuaries for rescued and confiscated apes require additional space and increased financial support in order to accept and care for animals currently captive in poor conditions. Governments, NGOs and foundations should consider allocating greater funding to sanctuaries for expansion until mechanisms are put in place to end ape trafficking, which should be of highest priority to policymakers.

Through a 2019 CITES resolution specific to great apes, 182 countries and the European Union reiterated that there are no circumstances in which their further removal from the wild would be justified (CITES, 2019). State parties are cautioned to be vigilant against wild-caught great apes being traded as allegedly captive bred. The resolution also recognizes the need for technical assistance and support to parties to enable the confiscation and treatment of live great apes. Further, state parties are urged to repatriate seized great apes to their countries of origin if suitable facilities exist for their welfare in captivity.

Enforce Legal Frameworks

Developing legal frameworks, as noted above, is only the first step toward addressing ape killing, capture and trade. Without effective and targeted enforcement of legislation, wildlife trafficking can remain a profitable and low-risk endeavor, particularly for those higher up the trade chain (Holmern, Muya and Røskaft, 2007). Policymakers should hold enforcement agencies accountable for addressing the interrelated deficiencies that have allowed ape trafficking to continue. Failures have included poor resourcing for investigators, low prosecution rates, few successful convictions, public and private-sector corruption, and complicity from social media and financial service companies.

Policymakers must ensure that enforcement of legal frameworks is consistently applied at every point of the wildlife trade chain, spanning source, transit and destination markets. To date, the greatest emphasis by governments in ape range states has been on law enforcement at source, targeting the hunters at the bottom of the trade chain. The application of national legislations and international regulations must encompass investigations, arrests, prosecutions, convictions and penalties for perpetrators at every level. These measures serve to remove key players from the enterprise and to send strong deterrent signals to those who might otherwise take their place. Additionally, interventions farther along the trade chain, targeting high-level traffickers, traders and kingpins who are responsible for recruiting, equipping, financing and exporting apes and ape products, can help prevent the recruitment of lower-level actors involved in poaching, storage and transportation (Moneron, Armstrong and Newton, 2020).

Successful enforcement requires agencies such as park rangers, police and customs to work in close collaboration. Given the multifaceted and global nature of the trade, inter-agency cooperation both nationally and internationally is essential. A study by Legal Atlas of 17 ape range states found that it was common for more than six enforcement agencies and five different management authorities to have overlapping responsibilities related to the illegal wildlife trade (Legal Atlas, n.d.). To coordinate wildlife law enforcement effectively, Legal Atlas recommends that range countries each establish a wildlife crime task force. The task force should be mandated to lead crime prevention initiatives, intelligence gathering, criminal investigations and prosecutions (Legal Atlas, n.d.).

Enforcement must also occur in consumer markets that are responsible for driving demand for apes and ape products. To stop trade flows across borders, import and export controls should be strengthened. This includes improving detection at transit hubs such as airports, which can benefit from the use of specially trained dogs. Customs officers must also be educated on the trade and taught to distinguish illicit wildlife products from legal ones (Chaber *et al.*, 2010). INTERPOL and the World Customs Organization underscore the need for political will in order for police and customs agencies to formalize a cooperative and efficient working relationship (INTERPOL and WCO, 2018).

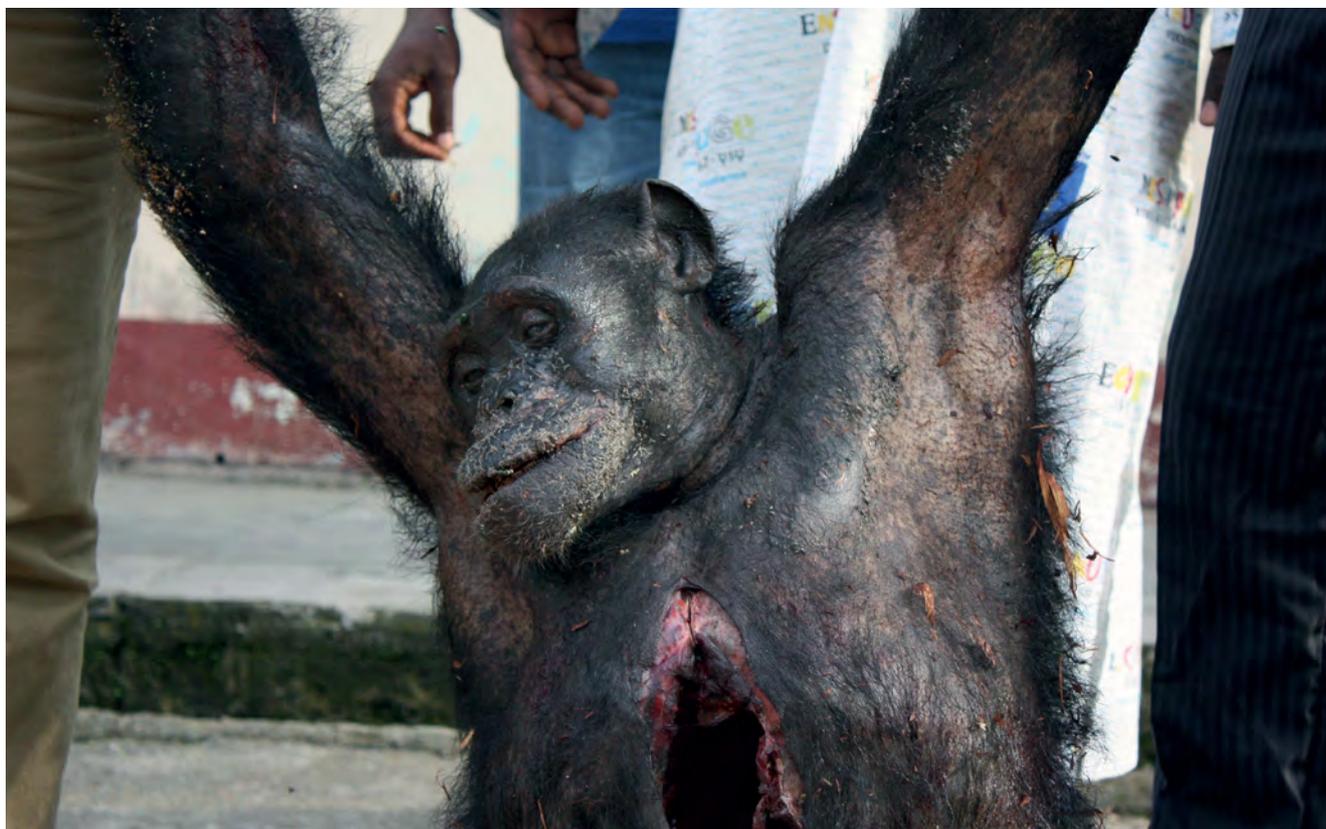
According to ICCWC, the effectiveness of law enforcement responses can be evaluated against eight desired outcomes: legal basis, deterrence, detection, intelligence-led investigation, specialized techniques, prosecution, penalties and a holistic approach. ICCWC offers a self-assessment tool in English, French and Spanish with a comprehensive set of 50 indicators that can be used by policymakers to monitor changes in national law enforcement capacity and effectiveness over time (ICCWC, 2016).

Ultimately, to be considered effective, law enforcement must prevent apes from being killed or captured from the wild (Felbab-Brown, 2018). There is evidence that crime prevention at source is most successful when undertaken jointly by local residents and police working cooperatively (Hawdon and Ryan, 2011). Strategies for engaging communities in conservation and wildlife crime prevention are discussed in detail below.

Regulate Industry

Industrial projects in remote areas that encroach upon ape habitats are a significant driver and facilitator of the illegal killing, capture and trade of apes and other endangered species. Industry actors have a responsibility to minimize the direct and indirect impacts of human settlements associated with their projects and must establish controls and measures to prevent and mitigate the motivation for such illegal activities. Through a resolution, states that are parties to the CITES treaty have urged actors in the agriculture, energy and extractive industries to comply with national and international legal frameworks and to minimize impacts on great ape populations and habitats through implementation of best practices (CITES, 2019).

Policymakers that regulate industrial activities should oppose projects that have a high risk of impacting ape habitat and should impose stringent safeguards on projects that are permitted to go forward. Companies involved with industrial agriculture, oil and gas exploration and the construction of linear or fixed infrastructure should be required under the terms of their government permits to provide basic services for workers and secondary communities to relieve the stress placed upon the natural environment and its wildlife. Worker communities should be provided with access to education, electricity, employment, food security, healthcare, sanitation, telecommunications, transportation and water. Project developers also must act to prevent the illegal killing, capture and trade in apes and other protected species, including reducing the threat of human–wildlife conflict.



A 2018 report to CITES identified the main threats to the survival of great apes as habitat loss, degradation and fragmentation, infectious disease, wild meat poaching, indiscriminate poaching, and deliberate killing due to conflicts over land. Confiscated chimpanzee carcass, following arrest of traders, Douala, Cameroon. © LAGA and The EAGLE Network



In his natural habitat. © Paul Hilton/Earth Tree Images



In captivity. © Paul Hilton/Earth Tree Images

All stakeholders involved with industrial expansion should strive to achieve economic development that has a net-positive impact on biodiversity or that results in zero net loss of biodiversity. Regulators should only approve developments that prioritize avoiding or preventing adverse impacts to biodiversity whenever possible. Avoidance is most effective when applied early in the process, such as by policymakers at the national strategic planning stage, or by developers during landscape-level strategic environmental assessments. Regulations should require that unavoidable impacts be minimized and reduced during development then rehabilitated, repaired or restored as soon as possible. Further, policies should be put in place that mandate offsetting of any biodiversity impacts that cannot be avoided and repaired. For additional information about mitigating the impact of projects, see Volume 3, *State of the Apes: Infrastructure Development and Ape Conservation*.

Close Online Markets

Most countries do not have legal frameworks in place to address the jurisdictional challenges posed by cyber-enabled wildlife trade (Wingard and Pascual, 2018). Regulatory systems that have not kept up with technological advancements in online advertising and sales should be amended with new legislative provisions. Even with applicable legal frameworks in place, law enforcement difficulties remain when investigating and prosecuting online traffickers. It can be challenging to identify suspects engaged in online trade or to pinpoint the origin of species being traded. INTERPOL offers guidelines for law enforcement agencies seeking to tackle internet-based wildlife crime (INTERPOL, 2020).

The cooperation of internet and social media companies is essential for effective law enforcement in these situations. Policymakers and enforcement agencies must engage companies more actively to encourage their collaboration and ensure their understanding of applicable wildlife laws. Companies should seek guidance from regulators on the development and implementation of robust corporate policies that prevent illegal activities on their platforms. They should also provide their full support to law enforcement investigations into violations of wildlife legislation.

Some social media companies are collaborating with NGO initiatives aimed at addressing illicit trade that is conducted through their platforms. For example, the Coalition to End Wildlife Trafficking Online was launched by the World Wildlife Fund (WWF), TRAFFIC and the International Fund for Animal Welfare (IFAW) in 2018 to engage the tech industry (WWF, 2018; n.d.). The coalition's 36 members, consisting of global companies, have blocked or removed more than 3.3 million listings that violated wildlife policies by March 2020 (The Coalition, 2020). To aid the coalition, NGOs have curated a list of approximately 250 social media hashtags (#) which are believed to be associated with wildlife crime or related activities, including wildlife "selfies."

Additionally, coalition member Instagram, which is owned by Facebook, has implemented an alert system that is trig-

gered when a user searches for content that might be linked to wildlife trafficking. Users receive a pop-up that provides a link to information about the illegal trade in live animals and wildlife products; however, this is optional and it does not prevent the user from continuing to the requested page (Instagram, 2017). Policymakers, and the various social media platforms, should familiarize themselves with the capabilities of social media to inform the creation of additional campaigns and look at proactive ways to increase demand reduction and prevent illegal wildlife trade.

Engage Communities and Ensure They Benefit

Law enforcement, when used in isolation, is often an insufficient approach to wildlife crime prevention. Uneven prosecution, which targets only low-level perpetrators rather than powerful kingpins, can turn public opinion against wildlife, conservation organizations and enforcement agencies. Most countries prioritize law enforcement in and around ape habitats as the preferred method for addressing the killing, capture and trade of apes rather than balancing enforcement with community participation and behavior change approaches as they should.

Where hunting is linked to human–ape conflict from crop-raiding, it is necessary for stakeholders to understand community concerns related to personal safety and food and economic security. Once the context is fully understood, appropriate mitigation strategies can be identified. Guidance on this issue produced by IUCN and partner organizations suggests possible interventions including establishing buffer zones between ape habitats and human settlements, building physical barriers to separate crops and livestock from wildlife, crop substitution and compensation schemes to reimburse for crop damage (Bowen-Jones, 2012; Hockings and Humle, 2009).

Community knowledge of the environment and the proximity of local residents to ape habitats make them ideal candidates for engagement in wildlife stewardship activities (Felbab-Brown, 2017). Community buy-in and participation in anti-poaching and anti-trafficking initiatives should be prioritized as it can help disincentivize involvement in opportunistic wildlife crimes that might otherwise tempt community members. Policymakers should empower local residents by giving them greater control and authority over natural resource management decisions (Blomley *et al.*, 2010; Vermeulen *et al.*, 2009). Power-sharing, governance and incentive structures should be developed in consultation with communities so that they share the costs and benefits of conservation.

Local civil society groups embedded in communities should be engaged to play a facilitation role between residents, government agencies and international NGOs. Bottom-up methods that involve local people in stewardship of their resources are more likely to be successful than top-down mandates imposed upon communities by external stakeholders.

Incentives for Conservation

Communities that live near ape habitat are more likely to support conservation if they are empowered to secure tangible and intangible benefits from nature. Residents of each community are influenced by financial as well as non-financial factors, including beliefs, cognitive factors, culture, lifestyles, norms and values (Milner-Gulland and Rowcliffe, 2007; Vining and Ebreo, 2002). Ultimately, a decision whether to hunt or conserve wildlife will be made based on the relative significance an individual places on various elements, which will determine the option that yields greater net benefits (Cooney *et al.*, 2017).

Research shows that when communities benefit from wildlife they are incentivized to remain engaged in conservation in order to maintain access to those benefits (Cooney *et al.*, 2018). Conversely, costs to communities disincentivize their engagement and can lead to retaliation against wildlife or conservation authorities (Twinamatsiko *et al.*, 2014). Wildlife management policies should aim to reduce costs, which can include conflict between apes and humans, damage to crops, livestock or property, disease transmission to people or livestock or restricted or reduced access to land or natural resources.



A recent review of wildlife crime indicates that people are driven by four key goals that are often interlinked: meeting basic subsistence needs; generating income; retaliating against perceived conservation injustices; and satisfying traditional cultural practices. Dead orangutan found with 62 pellets in his body. © Paul Hilton/Earth Tree Images

Policymakers must develop governance and incentive structures that encourage local residents to protect rather than to hunt wildlife. To be effective, policies should be designed to increase the benefits and decrease the costs of conserving wildlife, while simultaneously decreasing the benefits and increasing the costs of illegal activities (Challender and MacMillan, 2014). Critically, governments should protect community land tenure and natural resource ownership rights. Residents should have the capacity to use nature for sustainable activities, such as gathering of non-timber forest products for use or sale or subsistence fishing. Where wild meat hunting threatens apes, affordable protein alternatives should be made available. To further incentivize ape protection, financial support could be offered, such as through the provision of microcredits or payments for ecosystem services schemes (WCS Nigeria, n.d.; Wicander and Coad, 2018).

Investment should also be made in developing sustainable employment or income generation opportunities for residents, such as in community-based wildlife tourism, protected area management or scientific research assistance (Drewry, 1997; Macfie and Williamson, 2010; Russell, 2001). In some cases, ape-based tourism has been able to generate significant local benefits, thereby creating a conservation incentive. However, the global COVID-19 pandemic has highlighted a key risk of depending on wildlife tourism as a key strategy for conservation.

Support Behavior Change

Policy Interventions

So long as there is demand for apes or ape products and the illicit industry is profitable for criminals, their killing, capture and trade are likely to continue. As such, interventions that target the end use of apes, their meat and their parts, must be conducted in parallel with enforcement activities along the trade chain.

Policymakers should facilitate collaboration among communities, government, industry, NGOs and the media aimed at addressing the drivers of biodiversity loss. Policies should enable engagement from different government agencies and private sector institutions on strategies that disincentivize and prevent the loss of biodiversity and destruction of ecosystems.

As attitudes toward apes are influenced by culture and economic factors, greater understanding of the cultural contexts that drive their illegal killing, capture and trade, as well as the consumption or use of ape products, is an important step toward developing effective intervention measures to stop it. Policymakers should engage partners to help define and assess the specific cultural factors at play within a particular community using participatory approaches, then tailor custom community-based demand reduction and behavior change strategies to that setting (Wilkie *et al.*, 2016).

Where ape meat is consumed or ape body parts used, baseline surveys can help uncover motivations and inform demand

reduction interventions that respect people's cultural identities (van Vliet and Mbazza, 2011). Conservation education in schools and the use of mass media platforms can be effective means for communicating behavior change messages. For example, a public awareness campaign aimed at reducing the consumption of gorilla meat in Nigeria utilized a radio serial drama to influence attitudes toward the animals (WCS Nigeria, n.d.; Wicander and Coad, 2018).

Behavioral shifts can help reduce demand and therefore lower prices, making the trade less attractive to criminals (Linkie *et al.*, 2015). Advocacy campaigns can also help shift government policy and spur change in private sector action. For example, animal welfare activists have been influential in regard to the use of apes as performers in the entertainment industry.

As part of situational crime prevention, communities with higher likelihood of becoming involved in ape trafficking should be targeted with communication about laws, criminal penalties and the socioeconomic impacts associated with being arrested, prosecuted, convicted and ultimately fined or imprisoned for illicit activities (Clarke, 2009).

Public Behavior Change Campaigns

Behavior change campaigns that integrate attitudinal, cultural, economic and social arguments should be used to shift the perception of consuming, keeping or using apes. Social media platforms, which have been implicated in the illegal wildlife trade, also present opportunities to communicate with large numbers of people and reach them with messages that promote conservation. Digital marketing initiatives can raise awareness and influence attitudes, behaviors and opinions. Online and mass media campaigns can discourage consumption, influence policymakers, mobilize private sector action and shift societal perceptions. Governments and NGOs should build upon existing activities in this space and pursue collaboration with influential opinion leaders and private sector entities such as internet and media companies.

For example, in 2016, the United Nations Environment Programme began its ongoing campaign Wild for Life: Wildlife

Crime Just Got Personal in nine languages, in partnership with 20 NGOs. The campaign's objective is to mobilize public support then channel it toward encouraging government action. The first phase of Wild for Life profiled 26 species affected by wildlife crime, including the orangutan (Wild for Life, n.d.). The second phase will add gorillas and chimpanzees. A group of 30 goodwill ambassadors and celebrity champions with a combined social followership of 500 million users are supporting the campaign. As a result, Wild for Life messages have received 1.5 billion views on social media, 4.5 million social engagements with content, such as likes and shares, and 50,000 pledges from participants to use their own spheres of influence to discourage illegal wildlife trade.

WildAid, an NGO dedicated to achieving demand reduction through awareness campaigns, has found that changes in behavior come when audiences learn a key fact of which they had been unaware or when new societal norms are created as a result of increased awareness. Attitudinal surveys conducted by WildAid to evaluate the impact of the organization's celebrity demand reduction campaigns demonstrate that communications and public service announcements, such as TV ads, posters, billboards and social media content, have resulted in increased awareness, less likelihood to buy illicit wildlife products and reduced consumption (WildAid, 2014, 2017, 2018a).

For example, 75% of people surveyed by WildAid in China in 2006 were unaware that shark fin soup is made from sharks, as the dish is called "fish wing soup" in Chinese. By 2013, after years of campaigning, WildAid found that 85% of respondents surveyed in four major Chinese cities had stopped consuming shark fin soup. Of those polled, 65% said awareness campaigns had influenced their behavior (WildAid, 2014). Similarly, a 2014 WildAid baseline survey in Viet Nam found that 69% of respondents believed that rhino horn had medicinal benefits. When another attitudinal survey was taken in 2016 to measure the impact of awareness campaigning the percentage had dropped to 9.4% (WildAid, 2018b). WildAid also had success sharing knowledge in Viet Nam that rhino horn is made of keratin, similar to human hair and fingernails. The organization measured a 258% increase in knowledge of this key fact over a two-year period (WildAid, 2015).

YAO MING
姚明

JOIN ME, SAY NO TO 與我攜手
向魚翅說"不" SHARK FIN SOUP.

73,000,000 sharks a year end up in shark fin soup.
Many are "finned" wasting 95% of the animal.

WWW.WILDAID.ORG WHEN THE BUYING STOPS, THE KILLING CAN TOO.

WILDAID SHARK SAVERS OCEANA THE HUMANE SOCIETY

© WildAid

Conclusion

To stop the illegal killing, capture and trade of apes and their products, which imperils dwindling and fragmented wild populations, stakeholders need to undertake swift, strategic and simultaneous activities at each and every intervention point along the trade chain. Protecting apes, humanity's closest wild relatives, requires coordinated action from stakeholders at the local, national and global levels. Communities, donors, governments, individuals, NGOs and private sector actors all have a responsibility to participate and collaborate

across geographies, sectors and disciplines to address the complex and interconnected drivers of ape hunting. All stakeholders are accountable for safeguarding the future for wild apes and nothing less than their full engagement undertaken with the utmost urgency will be sufficient, given the fragile status of these species. Protecting the apes will also protect their habitats and the ecosystem services they provide to people locally and to the health of the planet. Executing the recommendations presented here will require improvements to governance and investments in sustainable development that should be placed high on the agendas of policymakers worldwide.

Annex I. Great Apes and Gibbons

| GREAT APES | | |
|-----------------------------|---------------------------------------|--|
| <i>Pan</i> genus | | |
| Bonobo | <i>Pan paniscus</i> | ■ Democratic Republic of Congo (DRC) |
| Central chimpanzee | <i>Pan troglodytes troglodytes</i> | ■ Angola ■ Cameroon ■ Central African Republic ■ DRC ■ Equatorial Guinea ■ Gabon ■ Republic of Congo |
| Eastern chimpanzee | <i>Pan troglodytes schweinfurthii</i> | ■ Burundi ■ Central African Republic ■ DRC ■ Rwanda ■ South Sudan ■ Tanzania ■ Uganda |
| Nigeria–Cameroon chimpanzee | <i>Pan troglodytes ellioti</i> | ■ Cameroon ■ Nigeria |
| Western chimpanzee | <i>Pan troglodytes verus</i> | ■ Ghana ■ Guinea ■ Guinea-Bissau ■ Ivory Coast ■ Liberia ■ Mali ■ Senegal ■ Sierra Leone |
| <i>Gorilla</i> genus | | |
| Cross River gorilla | <i>Gorilla gorilla diehli</i> | ■ Cameroon ■ Nigeria |
| Grauer's gorilla | <i>Gorilla beringei graueri</i> | ■ DRC |
| Mountain gorilla | <i>Gorilla beringei beringei</i> | ■ DRC ■ Rwanda ■ Uganda |
| Western lowland gorilla | <i>Gorilla gorilla gorilla</i> | ■ Angola ■ Cameroon ■ Central African Republic ■ Equatorial Guinea ■ Gabon ■ Republic of Congo |
| <i>Pongo</i> genus | | |
| Northeast Bornean orangutan | <i>Pongo pygmaeus morio</i> | ■ Indonesia ■ Malaysia |
| Northwest Bornean orangutan | <i>Pongo pygmaeus pygmaeus</i> | ■ Indonesia ■ Malaysia |
| Southwest Bornean orangutan | <i>Pongo pygmaeus wurmbii</i> | ■ Indonesia |
| Sumatran orangutan | <i>Pongo abelii</i> | ■ Indonesia |
| Tapanuli orangutan | <i>Pongo tapanuliensis</i> | ■ Indonesia |

► GIBBONS (excluding subspecies)

| <i>Hoolock</i> genus | | |
|---|---------------------------------|--|
| Eastern hoolock | <i>Hoolock leuconedys</i> | ■ China ■ Myanmar |
| Gaoligong hoolock (a.k.a. Skywalker hoolock) | <i>Hoolock tianxing</i> | ■ China ■ Myanmar |
| Western hoolock | <i>Hoolock hoolock</i> | ■ Bangladesh ■ India ■ Myanmar |
| <i>Hylobates</i> genus | | |
| Abbott's gray gibbon | <i>Hylobates abbotti</i> | ■ Indonesia ■ Malaysia |
| Agile gibbon (a.k.a. dark-handed gibbon) | <i>Hylobates agilis</i> | ■ Indonesia ■ Malaysia |
| Bornean gray gibbon (a.k.a. northern gray gibbon) | <i>Hylobates funereus</i> | ■ Brunei ■ Indonesia ■ Malaysia |
| Bornean white-bearded gibbon (a.k.a. Bornean agile gibbon) | <i>Hylobates albibarbis</i> | ■ Indonesia |
| Kloss's gibbon (a.k.a. Mentawai gibbon) | <i>Hylobates klossii</i> | ■ Indonesia |
| Lar gibbon (a.k.a. white-handed gibbon) | <i>Hylobates lar</i> | ■ Indonesia ■ Lao People's Democratic Republic (PDR) ■ Malaysia ■ Myanmar ■ Thailand |
| Moloch gibbon (a.k.a. Javan gibbon, silvery gibbon) | <i>Hylobates moloch</i> | ■ Indonesia |
| Müller's gibbon (a.k.a. Müller's gray gibbon, southern gray gibbon) | <i>Hylobates muelleri</i> | ■ Indonesia |
| Pileated gibbon (a.k.a. capped gibbon, crowned gibbon) | <i>Hylobates pileatus</i> | ■ Cambodia ■ Lao PDR ■ Thailand |
| <i>Nomascus</i> genus | | |
| Cao Vit gibbon (a.k.a. eastern black crested gibbon) | <i>Nomascus nasutus</i> | ■ China ■ Viet Nam |
| Hainan gibbon (a.k.a. Hainan black crested gibbon, Hainan black gibbon, Hainan crested gibbon) | <i>Nomascus hainanus</i> | ■ China (Hainan Island) |
| Northern white-cheeked crested gibbon (a.k.a. northern white-cheeked gibbon, white-cheeked gibbon) | <i>Nomascus leucogenys</i> | ■ Lao PDR ■ Viet Nam |
| Northern yellow-cheeked crested gibbon (a.k.a. northern buffed-cheeked gibbon) | <i>Nomascus annamensis</i> | ■ Cambodia ■ Lao PDR ■ Viet Nam |
| Southern white-cheeked crested gibbon (a.k.a. southern white-cheeked gibbon) | <i>Nomascus siki</i> | ■ Lao PDR ■ Viet Nam |
| Southern yellow-cheeked crested gibbon (a.k.a. red-cheeked gibbon, buff-cheeked gibbon, buffy-cheeked gibbon) | <i>Nomascus gabriellae</i> | ■ Cambodia ■ Viet Nam |
| Western black crested gibbon (a.k.a. black crested gibbon, black gibbon, concolor gibbon, Indochinese gibbon) | <i>Nomascus concolor</i> | ■ China ■ Lao PDR ■ Viet Nam |
| <i>Symphalangus</i> genus | | |
| Siamang | <i>Symphalangus syndactylus</i> | ■ Indonesia ■ Malaysia ■ Thailand |

Reproduced from Volume 4, *State of the Apes: Killing Capture and Trade*, "Apes Overview".

Abbreviations and Acronyms

| | |
|--------|--|
| CCFU | Cross-Cultural Foundation of Uganda |
| CITES | Convention on International Trade in Endangered Species of Fauna and Flora |
| GRASP | Great Apes Survival Partnership |
| ICCCWC | International Consortium on Combatting Wildlife Crime |
| IFAW | International Fund for Animal Welfare |
| IUCN | International Union for Conservation of Nature |
| NGO | Non-governmental organization |
| OECD | Organisation for Economic Co-Operation and Development |
| UNGA | United Nations General Assembly |
| UNODC | United Nations Office on Drugs and Crime |
| UNOTC | United Nations Convention Against Transnational Organized Crime |
| WCO | World Customs Organization |
| WCS | Wildlife Conservation Society |
| WWF | World Wildlife Fund |

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The illegal trade in live apes, ape meat and body parts occurs across all ape range states and poses a significant and growing threat to the long-term survival of wild ape populations worldwide. What was once a purely subsistence and cultural activity now encompasses a global multimillion-dollar trade run by sophisticated transboundary criminal networks. The challenge lies in teasing apart the complex and interrelated factors that drive the ape trade, while implementing strategies that do not exacerbate inequality. This volume of *State of the Apes* brings together original research and analysis with topical case studies and emerging best practices, to further the ape conservation agenda around killing, capture and trade.

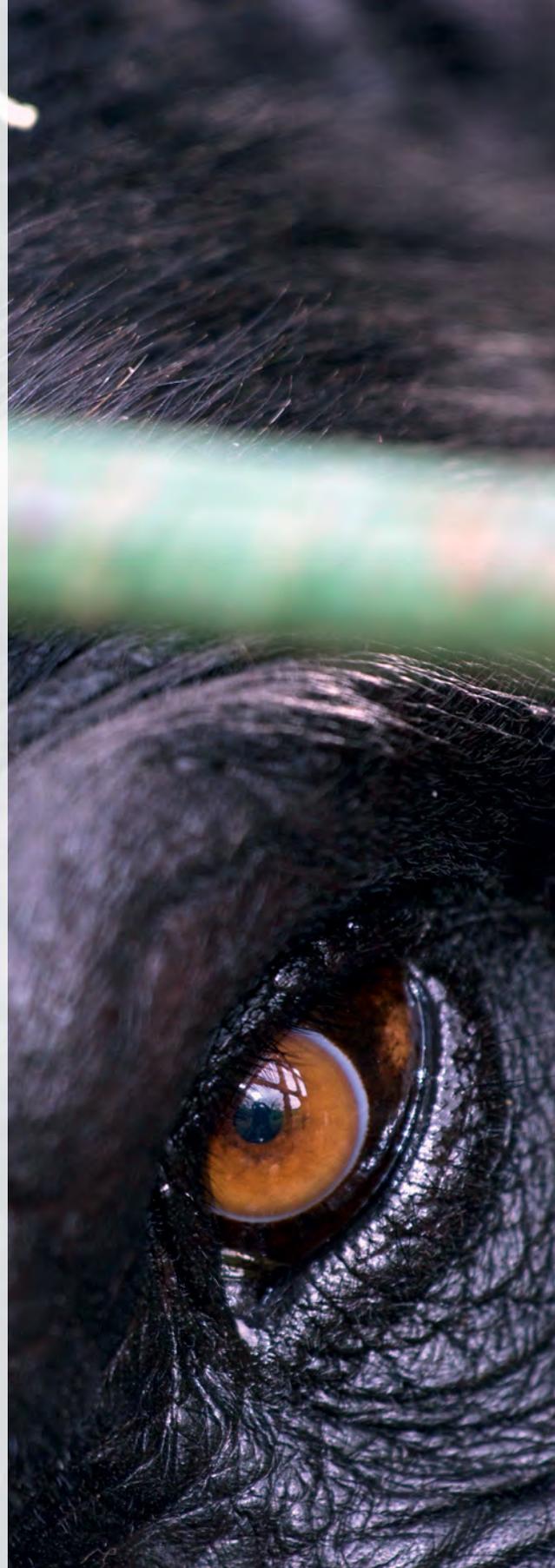
“Continuing their quest to address the severe threats and endangerment to the world’s great apes and gibbons, the Arcus Foundation has published the powerfully impactful and critically awakening series on great ape and gibbon conservation, *State of the Apes*.

State of the Apes explores the complexities between the human drive for socio-economic development and the continued struggle for survival of all apes. As the COVID-19 pandemic has shown us, we need to better understand the interlinkages between humanity and our natural world. The *State of the Apes* series provides potential solutions to minimize and mitigate biodiversity impact by deploying conservation efforts led through collaboration, financial investments, policies and education. Intended for both decision makers and stakeholders, this publication provides the analytical foundations to influence debate, practice and policy, aimed at reconciling ape conservation, human welfare and the pressures of economic and social development.

Every generation is not without its challenges; however, very few times in history are we presented with the ability to forever influence every subsequent generation. Great apes and gibbons are critical links to our evolutionary past and to our future, and conserving these species is, in fact, the act of saving a part of ourselves.”

Inger Andersen

Under-Secretary-General of the United Nations and
Executive Director of the UN Environment Programme



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