



INTRODUCTION

Section 1: Killing, Capture, Trade and Conservation

This, the fourth in the *State of the Apes* series, focuses on the impact of killing, capture and trade on ape conservation and welfare. The first three volumes of *State of the Apes* briefly considered these issues in relation to extractive industries, industrial agriculture and infrastructure development (Arcus Foundation, 2014, 2015, 2018). This volume explores these relationships more explicitly, featuring in-depth analysis of the hunting of and trade in apes, the impact on wild ape populations and captured individuals, the relevant legal and regulatory framework, the cultural and socioeconomic drivers behind ape hunting, and the responses to these drivers, including conservation initiatives and law enforcement efforts.

Trade in live apes, parts and products occurs across multiple scales, from the local to the global. The drivers of this trade are dynamic, reflecting evolving consumer preferences and economic fluctuations. Illegal hunting and the ape trade thrive under a variety of circumstances, including when law enforcement is inadequate; corruption is rampant; law enforcement officials are not trained to identify trafficked species or

conduct meaningful investigations; infrastructure development permits better access to forests, markets and transportation; people associate ape meat consumption or owning a pet with status; and enhanced connectivity allows for the spread of social media. These and other factors complicate efforts to curb the demand for apes and to protect ape populations. As a result, interventions to date have not been enough to halt their overall slide towards extinction.

With the aim of helping conservationists, local communities, international agencies and other stakeholders reverse that trend, this volume of *State of the Apes* provides collected insights, tools and techniques for use in strategies to stem the demand for apes, as well as the supply. Ultimately, this volume is a call to engage with the complex drivers of the hunting, buying and selling of apes with a view to securing their conservation and well-being over the long term.

The State of the Apes Series

Commissioned by the Arcus Foundation, the *State of the Apes* series strives to raise awareness of the impacts of human activities on all great ape and gibbon populations. Apes are vulnerable to a range of threats that are primarily driven by humans, including hunting that supplies the trade in wild meat, body parts and live animals; deforestation and degradation of habitat; and the transmission of disease. Interactions between humans and apes continue to increase as development and human population growth drive further incursions into spaces that apes inhabit. By using apes as an example, this publication series aims to underscore the importance of wider species conservation.

State of the Apes covers all non-human ape species, namely bonobos, chimpanzees, gibbons, gorillas and orangutans, as well as

their habitats. Ape ranges are found throughout the tropical belt of Africa and South and Southeast Asia. Robust statistics on the status and welfare of apes are derived from the Ape Populations, Environments and Surveys (A.P.E.S.) Portal (IUCN SSC, n.d.). Abundance estimates for the different ape taxa are presented in the Abundance Annex, available on the *State of the Apes* website at www.stateoftheapes.com. The annex is updated with each new volume in the series, to allow for comparisons over time. Details on the socioecology and geographic range of each species are provided in the Apes Overview.

Each volume in the *State of the Apes* series is divided into two sections. Section 1 focuses on the thematic topic of interrogation, which in this case is killing, capture and trade. The immediate objectives are to provide accurate information on the current situation, present various perspectives and, wherever applicable, highlight best practice. In the longer term, the key findings and messages are intended to stimulate debate, multi-stakeholder collaboration and changes to policies and practice that can facilitate the reconciliation of economic development and the conservation of biodiversity. Section 2 is included in every volume to present details relating to the broader status and welfare of apes, both in their natural habitat and in captivity.

An Overview of the Ape Trade

The hunting of apes and the trade in live apes, their meat, body parts and products involve a series of illegal activities, from the killing or capture of individuals, to their transport and sale (see Box I.1). The live trade entails the capture, trafficking and sale of living wild apes (see Chapter 4); the wild meat trade supplies fresh or smoked ape meat for

human consumption, while traffickers of body parts and products offer their goods for cultural, medicinal or symbolic use (see Chapter 3). The drivers of ape hunting and trade vary across species, locations and socio-economic conditions. On the supply side, strong economic incentives motivate the illegal trade in protected species, particularly for the live trade (see Figure I.1), while poor law enforcement, corruption and challenges

in species identification (including of body parts) hamper efforts to curtail the trade (Clough and May, 2018; Stiles *et al.*, 2013).

The hunting of apes and the associated trade have direct and indirect impacts on their conservation and well-being. The primary direct impact is population decline or local extinction in areas where they are hunted (Tranquilli *et al.*, 2012). Hunting also affects ape behavior and ecology, leading to changes in social grouping, communication and interaction, as well as feeding and ranging behaviors. Among chimpanzees, human pressure in the form of hunting and habitat destruction can also increase the degree of intergroup conflict and lead to a higher rate of intraspecific killing (Williams *et al.*, 2008). Indirectly, hunting affects ecosystem functions in ape habitats, for example by limiting the reproduction of flora that are reliant on apes for seed dispersal and by having an impact on the abundance of chimpanzee prey species, such as monkeys (Effiom *et al.*, 2013; McGraw, 2007).

Determining the level of threat that the illegal trade poses to global ape populations is challenging, as many activities along the supply chain are conducted covertly. Threat levels may be ascertained by type of illegal trade or by ape species. The live ape trade attracts the most media attention and therefore greater efforts are focused on curtailing it (Shukman and Piranty, 2017); it remains unclear, however, which of the three types of trade—that in live animals, body parts or wild meat—poses the greatest threat to global ape populations (O. Drori and K. Ammann, personal communication, 2017).

Determining threat levels across species is similarly difficult, due largely to limited data, but some studies have been able to show that the killing of apes accounts for a significant loss of life. An interview-based survey in Borneo, for example, estimated that between 630 and 1,357 orangutans were killed between September 2008 and

BOX I.1

Hunting vs. Killing and Capture: A Note on Terminology

“Poaching”—which is illegal by definition—and “hunting” can involve the killing, injury (which may be fatal) or capture of wild animals. Ape body parts and products may be harvested for food; medicines or substances perceived to have medicinal properties; use in ritual or traditional practices; or personal fulfillment. Captured apes may be kept or supplied into the live animal trade, including for use in entertainment facilities, as photo props in the tourism industry and as pets (Etiendem, Hens and Pereboom, 2011; Fa, Currie and Meeuwig, 2003; Hastie and McCrea-Steele, 2014).

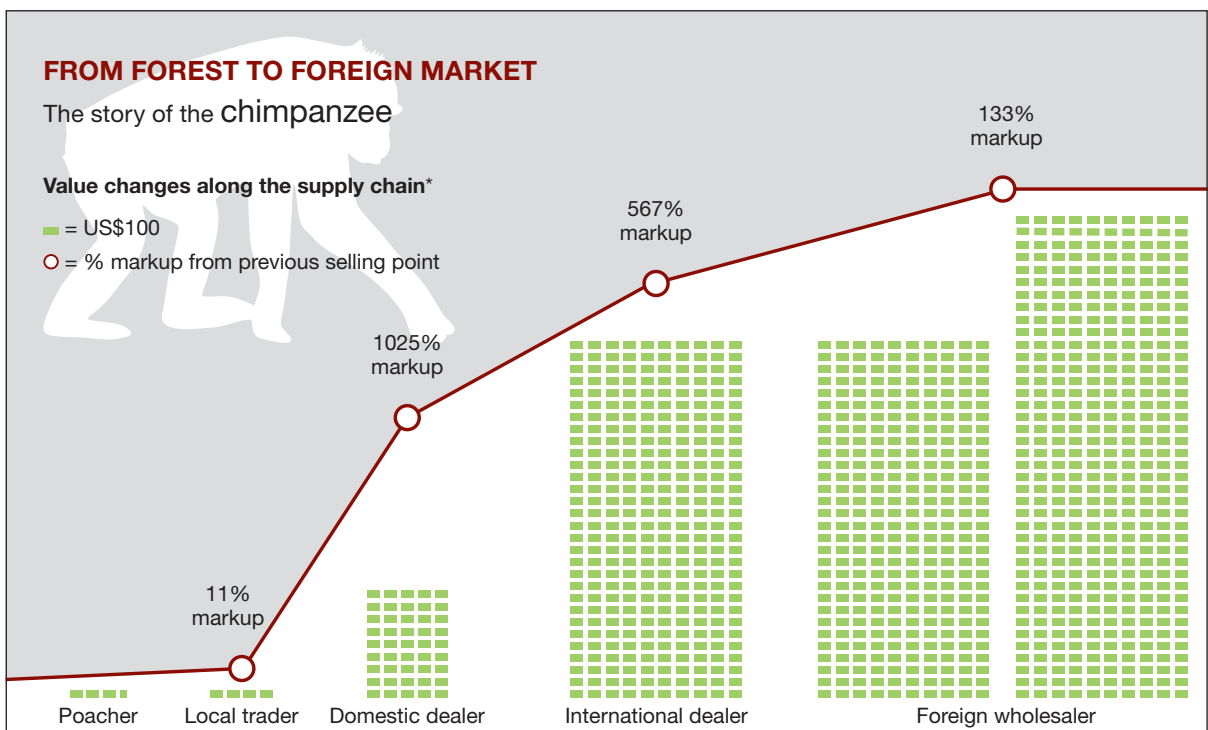
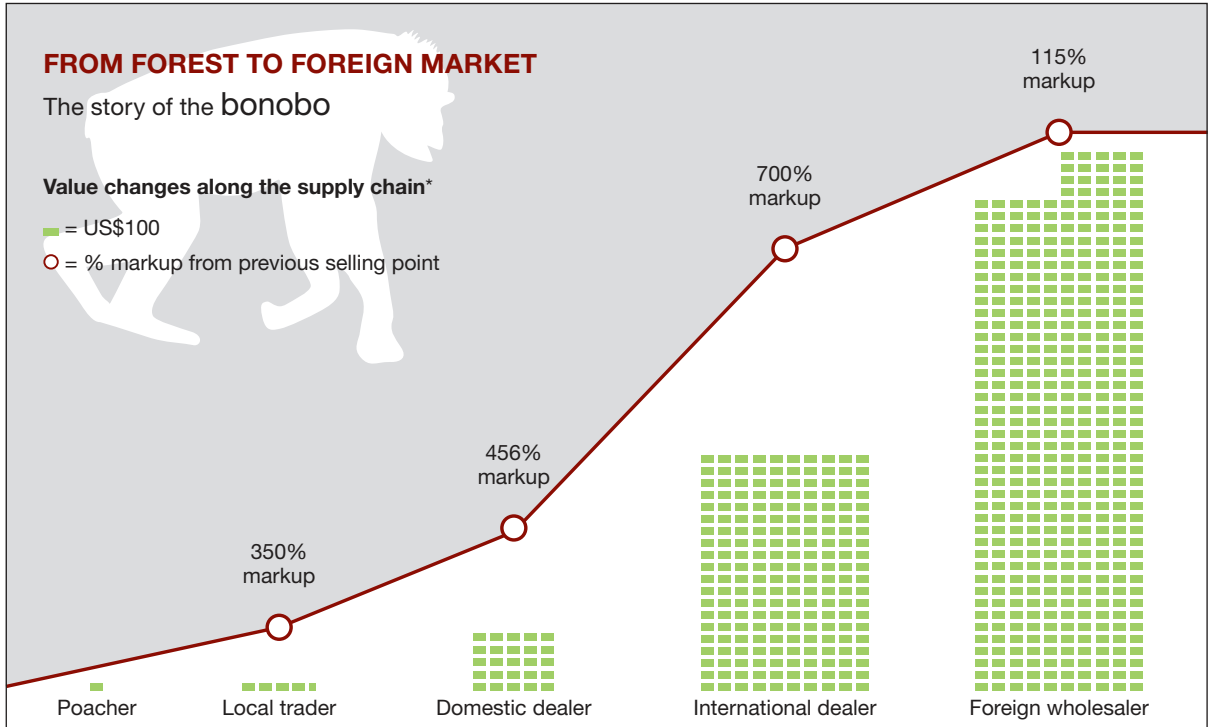
The terms “poaching” and “hunting” are often associated with the acquisition of meat or parts, and thus with the death of an animal. As this volume demonstrates, however, many apes are captured alive. Regardless of whether apes are killed or captured, their removal from the wild has implications for the survival of the species in their natural habitats (Stiles *et al.*, 2013).

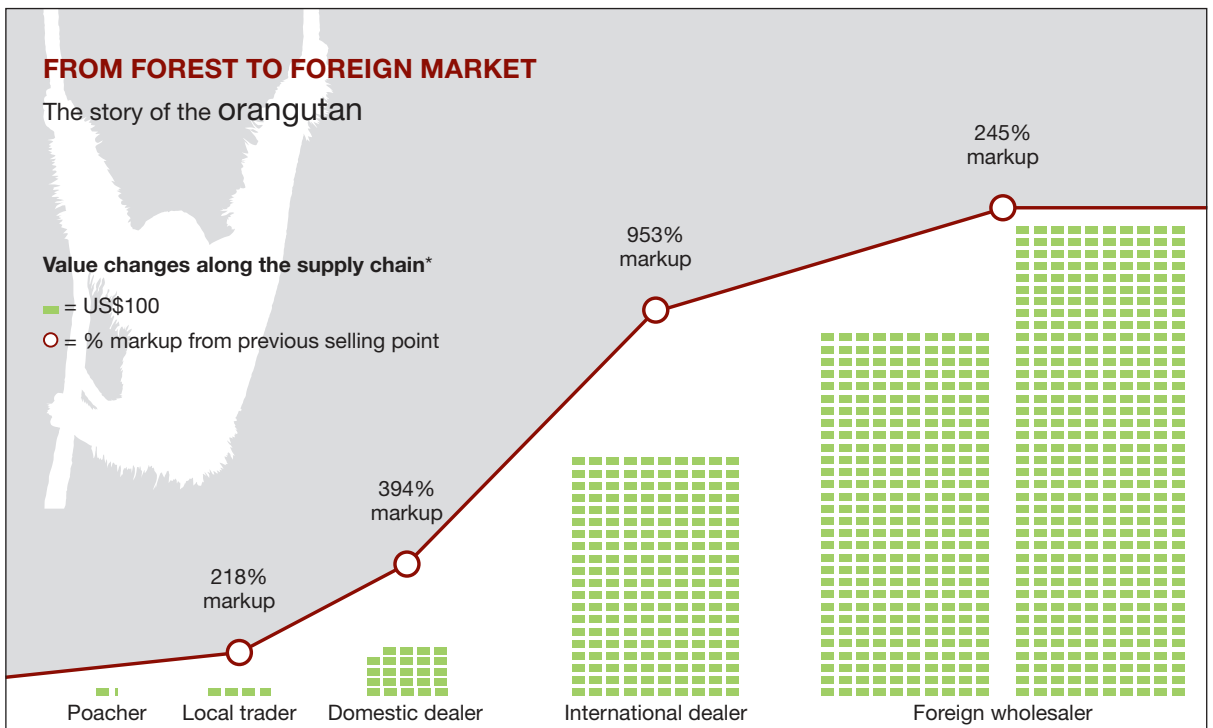
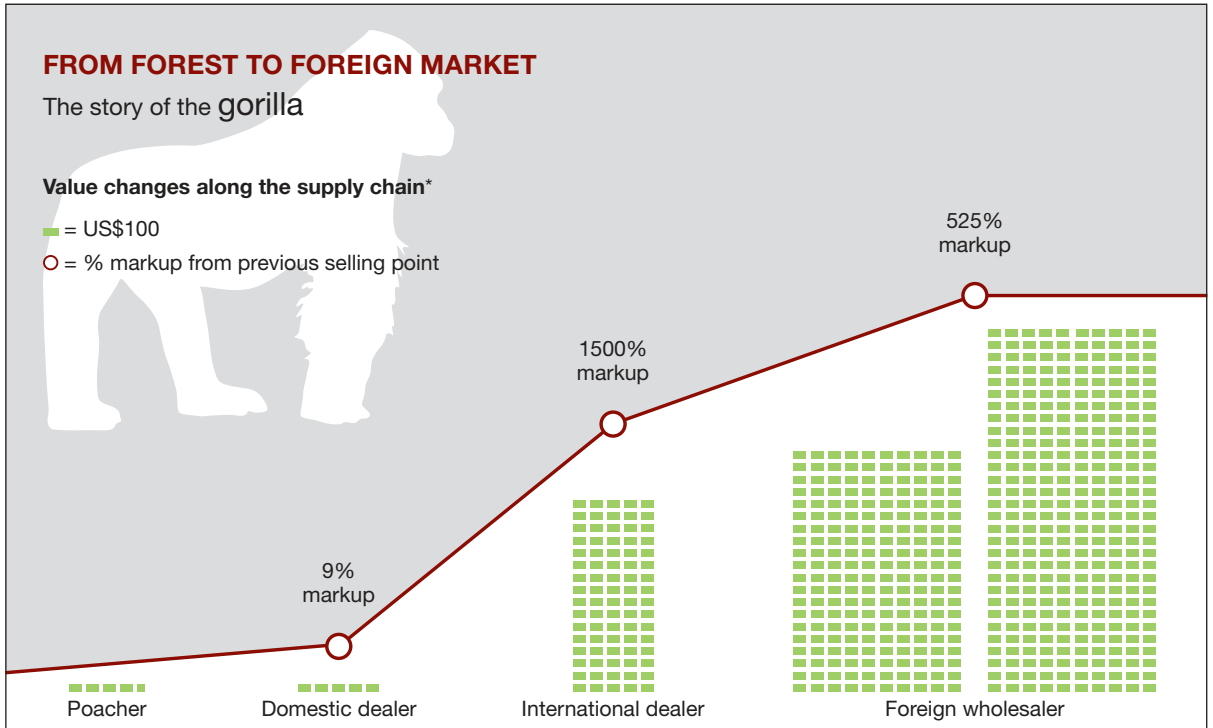
Apes are also killed for non-harvesting reasons, such as in retaliation for crop-raiding or damaging property, or in connection with fear for personal or community safety. Such killings are not always perceived as the results of hunting (Davis *et al.*, 2013).

As the title of this volume indicates, the key hunting-related threats to the viability and well-being of ape populations are killing and capture.

FIGURE I.1

Value Changes from Forest to Foreign Buyer for Bonobos, Chimpanzees, Gorillas and Orangutans





Note: * The original research uncovered a range of prices at each point in the supply chain. For graphical purposes, the study utilized the upper value for each segment of the supply chain.

Source: Clough and May (2018, pp. 8, 9, 25). © Global Financial Integrity 2018



BOX I.2**The Apes Seizure Database**

The Apes Seizure Database was launched at the 17th Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in October 2016 to address a significant lack of verified qualitative data on the scale of the illegal trade in great apes, including live animals, body parts and meat (CITES, 2016; GRASP, n.d.-a). Developed by the Great Apes Survival Partnership (GRASP) and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), it is the first global online database to gauge the scale and scope of poaching and illegal trade in great apes (GRASP, n.d.-b; UNEP-WCMC, n.d.). The aim is to assist national authorities, civil society and businesses to monitor the trade patterns, develop longer-term strategies and channel resources effectively to combat the trade.

As requested by the CITES Standing Committee, GRASP and the Primate Specialist Group of the International Union for Conservation of Nature Species Survival Commission prepared a report on the status of great apes and the relative impact of illegal trade and other pressures on their status (GRASP and IUCN, 2018). Recommendations from this report, including the call on CITES parties to contribute to the Apes Seizure Database, are reflected in an amendment to the resolution on great apes, adopted at the 18th Conference of the Parties, in August 2019 (CITES, 2019b).

Great ape sanctuaries, protected area authorities and other such actors are the key providers of relevant and case-specific seizure information. All data, once submitted, is validated by a great ape expert panel, the Technical Advisory Group. The database is hosted at database.un-grasp.org, but given the sensitive nature of the data, access to the database is restricted. GRASP and UNEP-WCMC manage the data providers' user rights, while only staff members of GRASP and UNEP-WCMC have access to all reported data.

Phase 1, including the development of basic technical infrastructure, is nearly completed and the database is operational. Ongoing activities include the development of an interactive user manual to attract regular submissions of new data, as well as refinement of a robust data validation process, the cornerstone of an independent and credible platform.

As data become truly useful when they are analyzed and overlaid with other contextual information, Phase 2 of the database, which is contingent on new funding, is to provide the following capabilities:

- the creation of automatic, web-based, geospatial data analysis tools to identify the state, trends and hot spots regarding poaching and illegal trade, including a public annual report to highlight main findings;
- the development of a sampling and export protocol to identify seized great apes or body parts using genetic data, as a way of supporting analysis of illegal activities and enabling repatriation of live apes to their country of origin, potentially with the help of the facial recognition algorithm “ChimpFace,” developed by Conservation X Labs (Timmins, 2019); and
- geographic and sectoral expansion of the database to increase involvement of West African stakeholders, customs organizations and other actors that are currently under-represented.

September 2009, and that roughly 2,000–3,000 animals were killed per year on average within the lifetimes of the survey respondents (Meijaard *et al.*, 2011, 2012). Given that fewer than 105,000 Bornean orangutans remain in the wild, these harvest rates are categorically unsustainable (Ancrenaz *et al.*, 2016; IUCN SSC, n.d.; see Box 1.3). Similarly, in Africa, an investigation into the scale of the wild meat trade in the Cross-Sanaga rivers region that stretches across Cameroon and Nigeria estimated that about 2,400 chimpanzees and 700 gorillas were hunted on an annual basis (Fa *et al.*, 2006). In view of the fact that the Nigeria–Cameroon chimpanzee population comprises 3,500–9,000 individuals, this offtake rate represents a major threat to their survival (IUCN SSC, n.d.; Oates *et al.*, 2016).

The complicity of corrupt authorities thwarts attempts to monitor the scale of the problem, while motivations for hunting and trade are also challenging to counter. Recent initiatives have sought to address the current lack of verified qualitative data on the scale of illegal trade in great apes (see Box I.2).

Hunted, Captured and Traded Apes: Typology and Scale

Wild apes are hunted, captured and traded for many different purposes, which vary across species and regions. The trade in apes is part of a much larger global wildlife trade—both legal and illegal—that occurs in and between virtually all countries (see Box I.3). Its three main subcategories are the trade in live apes, in wild meat and in body parts, as discussed below.

The Live Ape Trade

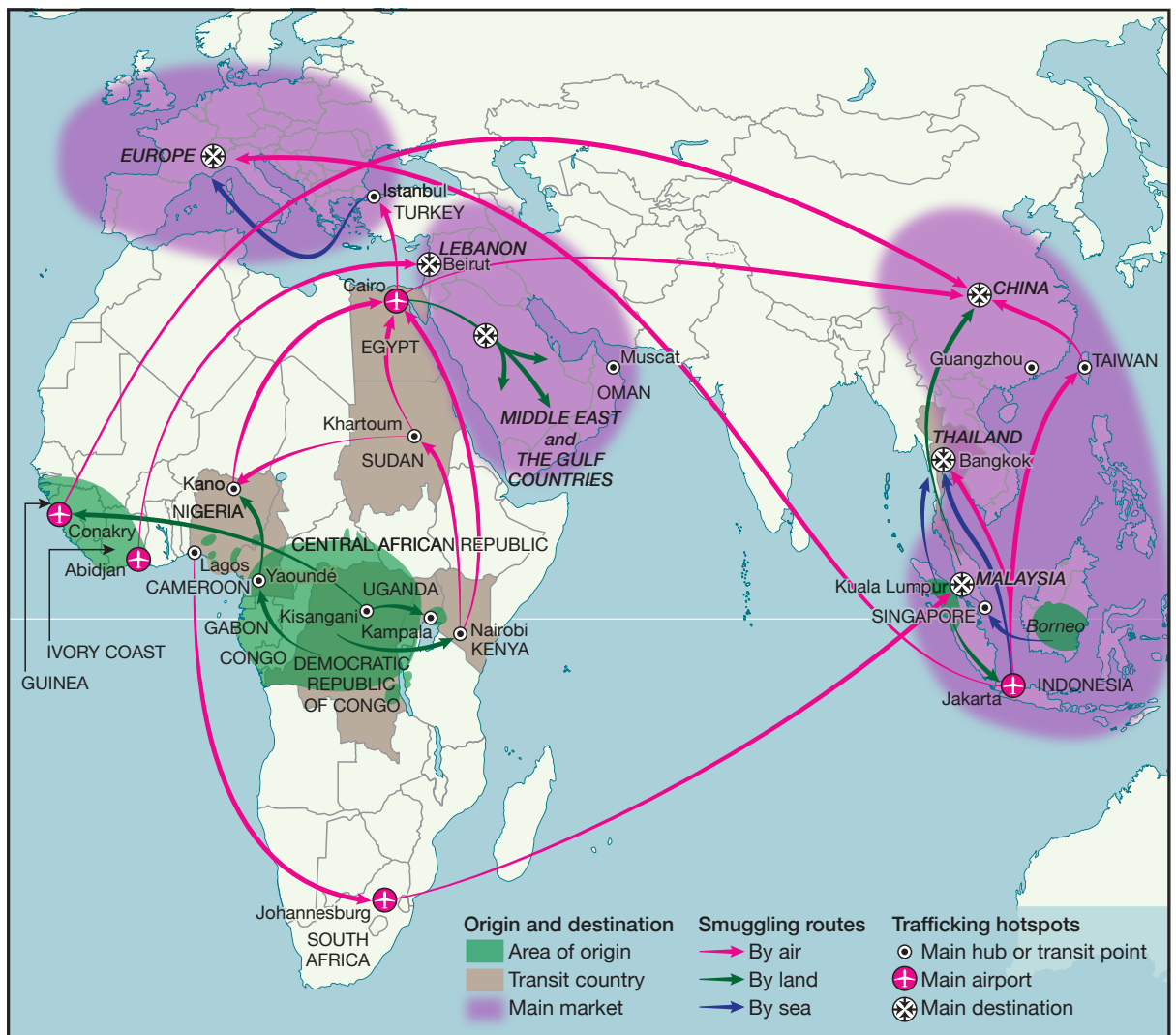
The live trade entails the illegal capture of living wild apes—typically infants—for sale

on the local or international market. Locally traded apes are primarily used as pets; they may serve as playthings for hunters' families, status symbols for rich and influential personalities, highlights of private zoos or ranches, or exotic tokens and even "rescues" (Caldecott, Miles and Annan, 2005; Nijman, 2005b; Stiles, 2016). Internationally traded apes are generally used as prestige pets or in entertainment, such as ape boxing attrac-

tions in Asia (Kerr, 2017). They may also be used to attract tourists to amusement parks, safaris and circuses. The use of apes—particularly gibbons—as photo props for tourist photo sessions on Asian beaches is also widespread (Stiles *et al.*, 2013).

Due to inadequate law enforcement, the trade in live apes is very difficult to measure, although some studies have investigated certain aspects of it (Nijman, 2005b;

FIGURE I.2
 Main International Routes for Illegal Trafficking of Great Apes



Source: Stiles *et al.* (2013, p. 32), based on the original map by Riccardo Pravettoni

Nijman *et al.*, 2017). In many cases, estimates of the scale of the trade are based on confiscations and the number of apes held in sanctuaries, even though these figures probably represent only a small portion of the trade (Stiles *et al.*, 2013). For a detailed assessment of the trade in live apes, see Chapter 4.

The international live trade is sophisticated, lucrative and involves many rich and powerful players, including collectors, middlemen and transporters. In Africa, apes appear to be captured and “stocked” so that demand can be met without significant delay (O. Drori and K. Ammann, personal communication, 2017). Transportation methods vary along the supply chain; when it comes to air travel, smugglers use private, charter and commercial planes of well-known airline companies, including Togo-based ASKY, Ethiopian Airlines, Kenya Airways and Turkish Airlines, often moving between carriers (K. Ammann, personal communication, April 2017; Stiles, 2016). Traffickers tend to rely on a number of approaches to enable transfer of apes: they use fraudulent permits from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; see Chapter 6); they integrate apes with other species that may be traded legally, such as certain monkeys; or they smuggle them using concealment in a carry-on or cargo container (Stiles, 2016).

International ape trafficking involves complex networks of actors in various countries (See Box 1.4). Figure I.2 shows key trade routes that originate in West and Central Africa and Southeast Asia and link to markets in China, Malaysia and Thailand; the Arabian Gulf states; and Europe. Although not shown in Figure I.2, key destination countries also include ex-Soviet states, as revealed in undercover investigations (Stiles, 2016). Ape transport networks are in a constant state of flux, responding to changes in demand, as well as surveillance, law enforcement, the complicity of corrupt CITES officials and flight scheduling.

Little is known about how orangutans are trafficked along Asian trade routes. Evidence suggests they may be transported by boat from ports in Borneo to Singapore and then by road or rail to Kuala Lumpur or Bangkok (Stiles, 2016). Orangutan traffickers are also known to take boats to Jakarta and then planes to Bangkok, Muscat, Guangzhou and other Chinese cities. While most of the live trade in gibbons appears to be domestic rather than international, limited evidence indicates that the Middle East and Singapore are destinations for this species (C. Kalaweit, personal communication, April 2017).

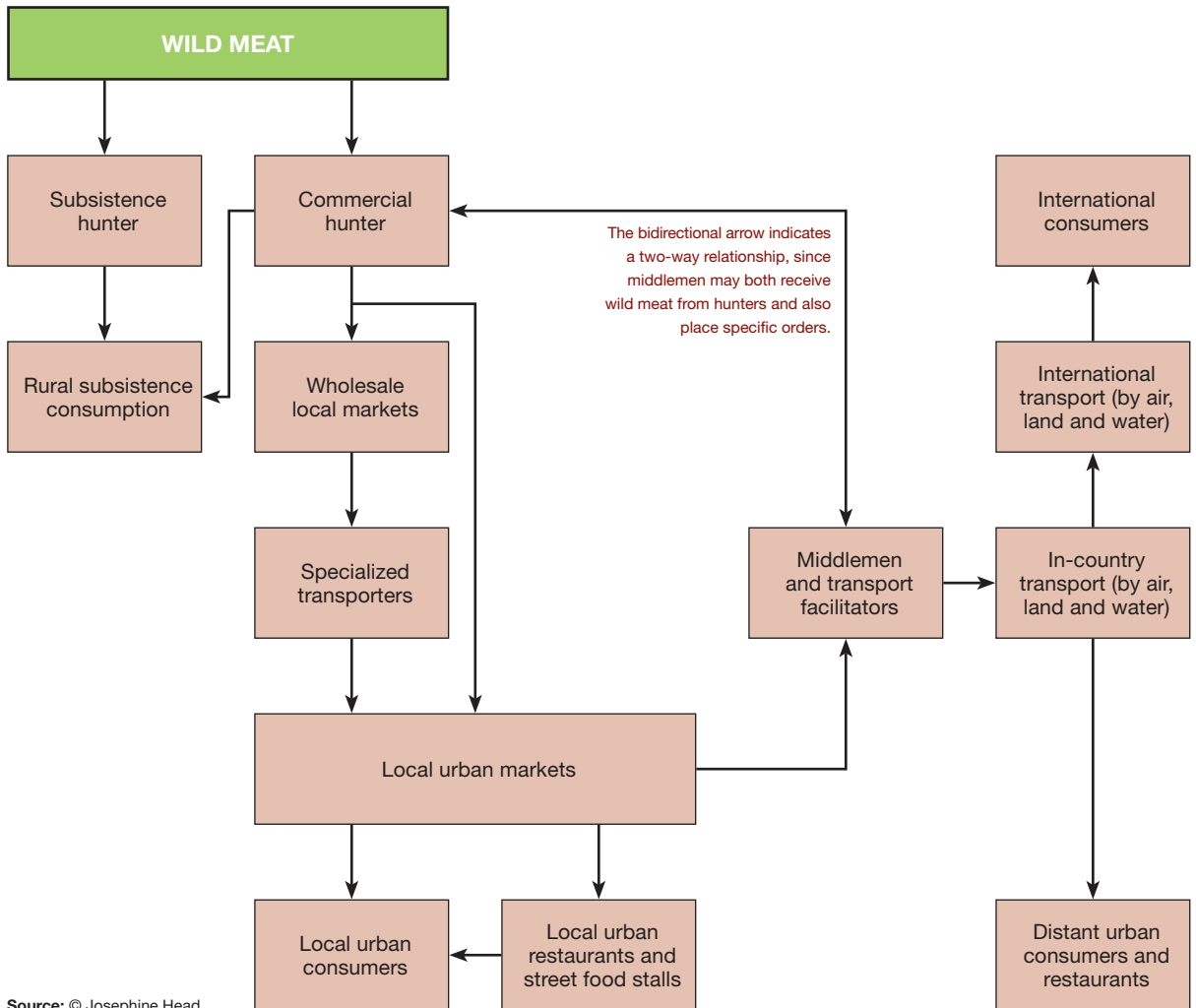
The Wild Meat Trade

Across most ape range countries of tropical Africa and Asia, the wild meat trade involves the sale of fresh or smoked ape meat for human consumption. The meat is usually butchered and either used to meet subsistence consumption needs, especially among local hunters and their families, or sold for economic gain. As shown in Figure I.3, supply chains for the commercial trade in ape meat can be long and complex. Products generally increase in value at each stage of the chain (see Figure I.1).

Within ape range states, the rate of ape meat consumption is generally associated with cost and taste, as well as status, particularly in urban areas (Nijman, 2005a). The international trade in ape meat, which is far more lucrative than the local one, is also linked to prestige, culture and status among consumers. For a detailed analysis of the wild meat trade, see Chapter 3.

The domestic and international trade in ape meat for human consumption has been well documented across Africa and Asia.¹ Less clear is the frequency with which it is consumed, and whether food is always the primary driver for killing apes, or whether wild meat is also acquired as a by-product of the trade in body parts or live animals, such

FIGURE I.3
 A Wild Meat Supply Chain



Source: © Josephine Head

as when hunters kill mothers to capture their young. People who kill orangutans do so primarily for food, while traditional medicine and the live infant trade account for just 3% of the killings each (Davis *et al.*, 2013). In West and Central Africa consumption of ape meat is widespread and ape meat is regularly found for sale in local markets. It is not known what proportion of ape meat is exported from Africa, as data on the international trade is limited, but a 2006 study of illegal markets in Brussels, Chicago, London,

Los Angeles, Montreal, New York, Paris and Toronto identified 27 records of chimpanzee and gorilla parts for sale (Brown, 2006). A few years later, in 2011, wild meat tested on a market stall in central England was found to be from a chimpanzee (Ellicott, 2011).

Anecdotal evidence suggests that ape meat that is exported to the United States and Europe is part of the wider illegal trade in wild meat. Customs data on confiscations of wild ape meat in Swiss airports between 2011 and 2013 indicate that the vast majority

came from Africa, while less than 2% arrived with passengers from Asia or the Middle East (Wood *et al.*, 2014). Evidence suggests that in the UK, the illegal wildlife trade operates through established smuggling routes of organized criminals (see Box I.5). Based on one report, 50% of those prosecuted for wildlife trade have previous drug- and firearm-related convictions (Cook, Roberts and Lowther, 2002). While various studies examine the international wild meat trade, assessing what percentage of internationally traded wild meat comes from primates, and specifically apes, remains challenging (Brashares *et al.*, 2011; Chaber *et al.*, 2010; Wood *et al.*, 2014).

The Trade in Parts

The trade in ape body parts occurs in countries of origin and beyond. Commonly traded parts—such as heads, hands, feet and bones—tend to be ascribed cultural or symbolic significance. Within ape range states their consumption or possession is linked to a range of beliefs, including making children stronger, healing fractures, curing arthritis, improving agility and protecting houses against fire (CITES and GRASP, 2006; Nforngwa, 2017; Zhou *et al.*, 2005). Although not covered in this volume, there is a suggestion that ape skulls are considered prized trophies in Western countries, particularly the United States, while in China, bones are in high demand for use in traditional medicine (Nforngwa, 2017). For more details on the trade in ape body parts, see Chapter 3.

Experts disagree on the scale of the trade in ape body parts. Some investigators of wildlife trafficking point to a rapid increase in demand, indicating that gorillas and chimpanzees are being hunted vigorously to feed a growing international trade in skulls and other body parts. They argue that this trade has all but supplanted the meat-based black market. Others maintain that the market is

old, that the associated crimes are relatively uncommon, and that the body parts are simply by-products of the trade in wild meat and live animals. They note that in ape-range states in Africa, the demand for hands and bones for medicinal purposes is scattered, small-scale and largely opportunistic (O. Drori and K. Ammann, personal communication, 2017).

Supply chains for the wild ape meat and body parts tend to overlap. Body parts from Africa largely transit through Cameroon, Nigeria and the West African coast, while much of the Asian trade originates in Indonesia and Malaysia (Stiles, 2016). The international supply chains begin with small-scale poachers in African and Southeast Asian forests, who supply game to a network of dealers, traders and traffickers, who smuggle the body parts—often alongside butchered wild meat—to final destinations, including in China, Europe and the United States (Brown, 2006).

Drivers of the Ape Trade

People become involved in the wild ape trade for various reasons, many of which depend on personal and local conditions, such as limited economic opportunities, a lack of affordable alternative protein sources, poverty, conflict and insecurity, cultural beliefs, urbanization and the commercialization of the illegal trade at the regional level (De Merode and Cowlshaw, 2006; Kümpel *et al.*, 2010). Other drivers of the trade include new and improved infrastructure that provides increased access to markets via shipping and flight routes, corruption and technology (Cook, Roberts and Lowther, 2002; Stiles, 2016). The extent to which the trades in live animals, wild meat and body parts influence each other is difficult to assess, not only because of the dearth of reliable, comprehensive data, but also because of the dynamic nature of these markets.