



# Elephant ivory trade in China: Trends and drivers



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## ABSTRACT

Poaching of African elephants is threatening the species viability. International non-governmental organizations and media often attribute the basic problem to China's domestic ivory market. We present quantitative and qualitative information on trends and drivers of the ivory trade in China. Results show that ivory is traded in “white” legally licensed retail outlets, “black” illegal shops and online trade forums, and “gray” live auctions of uncertain legality. White markets are primarily in Beijing, Shanghai, and Guangzhou. The numbers of legal factories and retail outlets increased from 9 and 31 in 2004 to 37 and 145 in 2013. Black markets thrive in online trading platforms, such as Baidu Post Bar. Gray markets auction ivory items surging around 2006, mushrooming after 2009, peaking in 2011, and plummeting over 97% following government intervention. During 2002 to 2011, the ivory auction in China and elephant poaching in Africa are strongly positively correlated. Drivers of the ivory trade are multiple and complex, including Chinese consumers' motivation stemming from the socially-constructed economic, social, cultural, aesthetic, religious, and medical values of ivory. We highlight China's intangible cultural heritage preservation, the boom of arts investment, and the auction ban in changing ivory values and influencing markets. We argue that elephant conservation can be more effective if it is based on a more comprehensive and contextual understanding of China's domestic ivory trade.

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## 1. Introduction

African elephants (*Loxodonta africana*) are in great danger. The remaining 419,000–650,000 elephants occur across 35–38 sub-Saharan countries (UNEP et al., 2013). The species viability is jeopardized by habitat loss and fragmentation, human–elephant conflict, and illegal killing. People place differential emphases on various parts of the overall, multifaceted problem. Nonetheless, one factor—poaching and the associated illegal ivory trade—is a significant threat requiring urgent, collective, and cooperative action (UNEP et al., 2013). Data shows that poaching increased from 2006 onwards and rose to an unsustainable level with illegal killing rates estimated to average 6.8% between 2010 and 2012 (CITES Secretariat, 2014a; Wittemyer et al., 2014). Likewise, illegal international ivory trafficking activity in 2011 represented about three times as much as present in 1998, and it remains at an alarming level (CITES Secretariat, 2014a). These trends threaten the goal “to secure and restore where possible sustainable elephant popula-

tions throughout their present and potential range in Africa” (African Elephant Range States, 2010:5).

Although, the world community (via the Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES) banned international commercial ivory trade in 1989, domestic trade continues in many countries (e.g., Martin and Stiles, 2008). China is a primary destination for illegal ivory (Underwood et al., 2013). Many nongovernmental organizations (NGOs) and media contend that China's ivory trade control policy is widely abused and that the Chinese demand for ivory is huge and growing (e.g., BBC “Ivory Wars,” 2011; EIA, 2011; Gabriel et al., 2012; National Geographic “Battle for the Elephants,” 2013; WildAid, 2013). Claims about the ivory trade in China are based on limited investigations by a few NGOs, researchers, and journalists, mostly from western countries. These claims produce mixed reactions in China. Whereas some people consider the allegations plausible, officials from China's State Forestry Administration (SFA) insist western NGOs and media exaggerate China's illegal ivory trade. Clearly, more reliable data are needed on the nature and scale of the illegal domestic ivory trade in China. A problem-oriented, comprehensive and contextual understanding of China's domestic ivory trade might help move beyond pejorative clichés and practically toward a more constructive approach for African elephant conservation.

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In this paper, after reviewing some history, we first characterize and analyze current ivory markets; second, we discuss ivory values relative to Chinese perspectives and relevant societal changes influencing values and thus driving the trends; third, we compare our findings with the literature. On this basis, we offer recommendations to aid elephant conservation. The word “ivory” refers exclusively to elephant ivory unless otherwise stated.

### 1.1. History of ivory carving and trading in China

In China, ivory is primarily used for carving. Ivory carving, as a traditional art, peaked in Ming (1368–1644 AD) and Qing (1644–1911 AD) dynasties (Kao, 1990). Several sites became centers of ivory carving, including Beijing, Jiangnan (i.e., Shanghai and nearby areas), Guangdong, and Fujian (Kao, 1990; Zhang, 2012). The major ivory consumers were the imperial court, scholar-officials, and other upper-classes. Catering to their tastes, assorted items were produced, including figurines, ornaments, scholar's articles, vessels, and other functional objects. In the first half of 20th century, great economic and political upheavals seriously impacted the industry. Around 1936 there were 126 ivory facilities with over 2780 employees in an ivory specialty street named “Da Xin” in Guangzhou. In contrast, by 1942 there were only 19 ivory facilities (Zeng and Lu, 2008). Similarly, by 1948 in Beijing there were only 40 ivory workshops with 56 employees (Zhang, 2012).

The ivory industry began a revival after the establishment of People's Republic of China. In 1958, the Beijing Ivory Carving Factory (Beijing ICF) and Guangzhou Daxin Ivory Factory (Daxin IF) were established. These two are among the largest and best-known ivory carving entities (Zeng and Lu, 2008; Zhang, 2012). Raw ivory was obtained via Hong Kong or directly from a few African countries with which China had diplomatic relations. There was almost no ivory sale in the domestic market, and ivory products were almost all exported through Hong Kong to the international market. Ivory carving became one of the major foreign-currency-generating industries in cities like Guangzhou (Zeng and Lu, 2008). During the Cultural Revolution (1966–1976), the industry suffered a severe setback, as did other traditions. The craft grew soon after the revolution. The Beijing ICF workforce increased from 496 in 1958 to 715 in 1980 (Zhang, 2012).

In response to poaching in the 1970s and 1980s, CITES in 1989 added the African elephant in Appendix I, which bans all international commercial trade for listed species (UNEP et al., 2013). Consequently, the Chinese ivory industry dwindled as supply dried up and sales fell dramatically. The number of employees in Daxin IF declined from over 600 before the ban to about 50 in 2005 (Anon, 2005). In the Beijing ICF, the number decreased from about 800 to near 60 in 2009 (Zhang, 2010). Many ivory carvers turned to other materials, for example, bones of cattle and camel, and ivory from the extinct mammoths (*Mammuthus primigenius*).

Simultaneously, some Southern African countries convinced CITES to down-list their elephant populations to Appendix II (i.e., Botswana, Namibia, and Zimbabwe in 1997 and South Africa in 2000) (UNEP et al., 2013). The international commercial trade in Appendix II species may be authorized if certain conditions required by authorities are satisfied (CITES, 1973). In order to become a CITES-approved ivory trading nation, the Chinese government introduced an Ivory Registration and Certification Policy in 2004. After evaluation by a CITES verification mission, China was granted an ivory trading nation status (CITES Secretariat, 2005).

In 2008, the China National Arts & Crafts Group Corporation, Beijing Ivory Carving Factory, Guangzhou Daxin Ivory Factory, and Beijing Mammoth Art Co., Ltd. participated in a one-off ivory auction in Southern Africa. China purchased about 62 metric tons of elephant tusks. Presently, the 62 tons of raw tusks and the

remaining stockpiles that were imported before the CITES ban are the only legal source of ivory in China. The amount of raw ivory released to the current market is controlled to about 5 tons per year (SFA, 2008).

## 2. Materials and methods

We used multiple methods to examine the “white,” “black,” and “gray” ivory markets. The “white” market consists of the licensed ivory facilities approved by the government. The “black” market is the illegal trade in unauthorized physical locatable shops or on the Internet. And, the “gray” market, whose legality is ambiguous, refers specifically to the live auction of ivory artworks.

To investigate the “white” market, we obtained the official Chinese list of legal ivory processing factories and retail outlets from 2004 to 2013. This list, updated every two years, is posted on the SFA's official website available to the public. We located addresses of ivory facilities in Google map, and plotted the distribution of the current white ivory market using ArcGIS. We also investigated the ivory enterprises using corporation databases managed by the State Administration for Industry and Commerce (SAIC).

To investigate the “black” market, first, Gao visited the unlicensed ivory shops in Guangzhou, Beijing, and Chengdu. While there, he had conversations with ivory sellers and buyers. Second, we monitored the illegal ivory trade on the Internet. From one of the most popular trade forums (“white plastics” in Baidu Post Bar), we collected 300 ivory advertisements posted from December 2013 to February 2014. We documented the date, the pseudonym (screen name) of sellers, and price, weight, size, type and photo of the ivory offered for sale, as information was available. We distinguished three kinds of ivory: raw, semi-worked, and worked (Martin and Stiles, 2008). Following the practice of Chinese ivory dealers, we further categorized raw ivory into: (1) trimmed whole tusk, (2) tusk section, including “tip,” “pie (disk),” “pillar,” and other fragments, and (3) carving waste. If the same pseudonym added on more than one posts for the same type of ivory, we used the lowest unit price (per gram) in our analysis. Ultimately, we collected 69 records of raw ivory, 11 records of semi-worked ivory, and 143 records of worked ivory. We summarized and reported the prices for raw ivory and a group of standard representative semi-worked and worked ivory.

To investigate the “gray” market, first, we collected the yearly number of ivory items on auction in mainland China ( $n = 12,382$ , 2002–2013) from an online auction database developed by Artron (auction.artron.net). This source is a leading Chinese art data company that gathers auction outcomes from auction houses all over China. In the Artron database, we searched auctioned items with “xiang ya” (象牙, elephant ivory) in the names. We restricted our search within the category of “ivory carving” (“Ya Diao”), and excluded data about mammoth ivory (“meng ma xiang ya,”  $n = 6$ ). In this way, we were able to verify that all the records that we collected are elephant ivory items. Using the same method, we collected a second data set ( $n = 29,475$ , 2002–2013) from Artxun (artxun.com), another top Chinese art data management company. The Artxun database did not allow us to restrict the search under the “ivory carving” category. Therefore, Artxun data, albeit more comprehensive as it encompasses elephant ivory items that appear under categories other than “ivory carving,” might contain any auctioned items with “xiang ya” in the names. The two sets of figures (i.e., yearly number of auctioned ivory items from Artron and Artxun) are strongly correlated ( $r = 0.994$ ,  $p < 0.001$ ). To be cautious and conservative, we used the Artron data to illustrate the trend of ivory gray market. Second, we explored the correlation between the

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