

Consumption of elephant and mammoth ivory increases in southern China

Lucy Vigne and Esmond Martin

PO Box 15510, Nairobi—00503, Kenya; email: rhino@wananchi.com

Abstract

China is the largest importer by weight of illegal ivory in the world (Milliken et al., 2009). In 2004, in order to reduce this illegal ivory trade in China, the government took steps for ivory to be sold with an official identification card for each item in the registered shops. China was then approved by CITES to buy tusks from the southern African ivory auctions in 2008; Chinese traders bought approximately 62 tonnes.

In January 2011 we surveyed ivory factories and retail outlets in Guangzhou, the largest city in southern China and an important ivory centre, and in Fuzhou, a city famous for carving. According to a factory owner in Fuzhou, in 2010 he paid USD 455/kg for government-owned 1-5 kg tusks. Similar privately owned ivory in 2010 cost USD 750/kg, according to various sources. High quality Siberian mammoth tusks were approximately USD 400/kg (wholesale) in 2010 in China.

In Guangzhou we counted 6,437 ivory objects (88% newer items) on display for retail sale, of which 3,947 were being sold without identification (ID) cards, which is illegal. There were 80 outlets selling ivory in Guangzhou, of which only eight displayed the compulsory ID cards. Since 2004 there has been a 50% increase in the number of ivory items for sale in Guangzhou. There were also 6,541 mammoth ivory items counted, mostly in specialty shops. Since 2004 there has been a 100% increase in the number of mammoth ivory items in Guangzhou. This is mainly due to an increasingly wealthy Chinese population, and favourable publicity about mammoth tusks. In Fuzhou, ivory demand is much lower; we counted only 282 ivory items (66% older pieces) in 39 outlets and none had ID cards. Mammoth ivory items numbered 100, mostly in one outlet.

Of all the elephant ivory items we counted in Guangzhou and Fuzhou, 63% did not have ID cards and were thus illegally on display. Recommendations to cut down illegal trade are given in this report.

Key words: Elephant, mammoth, ivory, China

Résumé

La Chine est le plus grand importateur d'ivoire illicite dans le monde (Milliken et al., 2009). En 2004, afin de réduire ce commerce illicite d'ivoire en Chine, le gouvernement a pris des mesures pour que l'ivoire soit vendu avec une carte d'identification officielle pour chaque article dans les magasins enregistrés. La Chine a ensuite reçu l'approbation de la CITES pour acheter les défenses des ventes aux enchères de l'ivoire sud-africain en 2008; les commerçants chinois en ont acheté environ 62 tonnes.

En janvier 2011, nous avons enquêté auprès des usines et des points de vente d'ivoire à Guangzhou, la plus grande ville dans le sud de la Chine et un centre d'ivoire important et à Fuzhou, une ville célèbre pour la sculpture. Selon un propriétaire d'usine à Fuzhou, il avait payé USD 455/kg en 2010 pour les défenses d'entre 1 et 5 kg appartenant au gouvernement. De l'ivoire similaire appartenant aux privés coûtait USD 750/kg en 2010, selon diverses sources. En 2010, les défenses des mammoths de Sibérie de haute qualité coûtaient environ USD 400/kg (en gros) en Chine.

A Guangzhou, nous avons compté 6.437 objets en ivoire (88% d'articles nouveaux) en vente en détail, dont 3.947 étaient vendus sans cartes d'identification, ce qui est illégal. Il y avait 80 points de vente d'ivoire à Guangzhou, dont seuls huit affichaient les cartes d'identification obligatoire. Depuis 2004 il y a eu une

augmentation de 50% dans le nombre d'articles en ivoire en vente à Guangzhou. Il y avait aussi 6.541 articles en ivoire de mammouth comptés, surtout dans les magasins spécialisés. Depuis 2004 il y a eu une augmentation de 100% dans le nombre d'articles en ivoire de mammouth à Guangzhou. Ceci est principalement dû à une population chinoise de plus en plus riche, et une publicité favorable sur les défenses de mammouth. A Fuzhou, la demande d'ivoire est beaucoup plus faible, nous n'avons compté que 282 articles en ivoire (66% des pièces anciennes) dans 39 points de vente et aucun n'avait de carte d'identification. Les articles en ivoire de mammouth se chiffraient à 100 pour la plupart en un point de vente.

Parmi tous les articles en ivoire d'éléphant que nous avons comptés à Guangzhou et à Fuzhou, 63% n'avaient pas de cartes d'identification et donc étaient illégalement en vente. Dans ce rapport nous donnons des recommandations pour réduire le commerce illicite.

Introduction

The economic boom in China has sparked growing concern about illegal ivory consumption. China has a long history in ivory (Martin & Stiles, 2003), and ivory factories still produce an array of elaborate carvings and smaller items. Guangzhou and Fuzhou in south and south-east China are famous for ivory carving.

After the 1990 CITES ban on ivory imports and exports, Chinese craftsmen increasingly turned to bone carving and recently increased their carving of mammoth ivory (*Mammuthus primigenius*). The mammoth, being extinct, is exempt from CITES, and tusks from Siberia are imported mostly via Hong Kong. In November 2008, Chinese ivory traders bought 62 tonnes of elephant tusks, along with traders from Japan (Vigne & Martin, 2010) during one-off auctions in Botswana, Namibia and South Africa. CITES allowed this trade as the Chinese government had introduced new legislative measures to control their ivory trade.

What has been the effect of this new injection of legal elephant tusks onto the Chinese market? How well is law enforcement working? What is the evidence of illegal ivory for sale? What are the views of the traders and consumers about elephant ivory

and mammoth ivory? Are the two ivories being sold separately or being mixed? And how has demand for elephant and mammoth ivory changed in recent years (Martin, 2006)?

Methodology

We carried out fieldwork in the two main ivory manufacturing centres of southern China: Guangzhou (also important for retail sales) from 10 to 17 January and



© Lucy Vigne

Figure 1. This ivory carver in Guangzhou was working at a government ivory factory.

Fuzhou from 18 to 23 January 2011. Factories and shops that were last surveyed in 2004 by Esmond Martin were re-visited where possible (Martin, 2006). Information on new locations was collected from the Internet, taxi drivers, ivory factory managers and vendors. Most ivory retail outlets were surveyed. Ivory pieces on display for sale were counted, categorized by type, priced, checked for ID cards and photographed. Mammoth and hippo ivory items were similarly recorded. Vendors were interviewed about their sales and turnover. Three factories in Guangzhou and three in Fuzhou that were crafting items from elephant ivory, mammoth ivory and bone

were visited. Data were collected on the numbers of craftsmen, tusk prices, items produced and amounts of materials used to compare with earlier surveys. For this report when the word 'ivory' or 'tusk' is used alone, it refers to elephant ivory. The phrase 'old ivory items' refers to those made up to 1990 (identifiable by style and condition) and 'new ivory items' means those made after 1990.

Ivory legislation in China

Seizures

There are four main sources of elephant tusks in China: old privately-owned stocks, government supplies, the legal 62 tonnes imported in 2008 and illegal tusks smuggled into China after 1990. The last source greatly concerns wildlife conservationists and law enforcement officials. According to Elephant Trade Information System (ETIS) analysis, from 1990 to 2008, seizures of tusks and worked ivory en route to China and reaching the country were the highest in the world by weight and third by number of pieces (Milliken et al., 2009). ETIS concluded, 'China remains the most important contemporary player in the illicit trade in ivory' (Milliken et al., 2009).

Legislation on retail sales

In order to reduce the selling of illegal ivory, the Chinese government only allows ivory items in specific registered shops, and the shop owner must provide information to the government on how much is sold and to whom. According to Wan Ziming at Beijing's CITES office, in 2010 there were 33 designated ivory manufacturers and 137 designated ivory retailers in China. The list of designated ivory dealers for 2011 was expected to be similar. In 2010, there were 12 ivory factories and 25 designated retail outlets in Guangdong and Fujian provinces. The shops are required by law to display framed certificates that state that they are permitted to trade in elephant ivory. In addition, since May 2004, all elephant ivory items must have an ID card beside the object on display for sale (unlike mammoth ivory items). Small items, such as pendants, may have their ID cards in a drawer if there is no space with the item. If an item weighs over 50 g, a photo of the item must be shown on the ID card as well as the serial number, name of factory, size, weight and other descriptions of the item. If an ivory item is less than 50 g, the ID card/certificate

does not require a picture of the item (Wan Ziming, pers. comm. February and March 2011).

The State Forestry Administration provides leaflets in the ivory shops, written in Chinese, that request customers to buy ivory only in designated ivory shops and to ask for the ID card. The leaflet explains how to identify an array of complicated security measures on each ID card: hand-painted floral patterns and shading lines, laser anti-counterfeit labels for security, 'drip disappeared' printing technology, security lines, relief shading, double 's' anti-lift incisions, colourless fluorescent security ink and microfilm text. The leaflet describes the government's 'standardization of domestic ivory management measures' and states that an ivory item cannot be separated from its ID card, which guarantees its legal status. It states that if an item is less than 50 g and is a unique artistic piece of high value, then it is recommended that its photo is also on the ID card, but it is not mandatory. Most small items (less than 50 g) are mass-produced with no independent features or patterns, such as necklaces, bracelets, rings, chopsticks and stamps, so these items require only a numbered ID card with no photograph. The leaflet further notes for foreign tourists and expatriates that 'without permission to import elephant ivory and its products [it] is illegal. Similarly [for] PRC citizens without permission to carry ivory and its products from abroad [it] is illegal [at] immigration also'. It also states that 'Citizens from abroad, to carry ivory and ivory products [through] immigration, need to get permission from relevant departments of the exporting country and issue export certificates, while government departments need to get the consent of the appropriate department for an import licence [for] customs before release'.

The leaflet further explains that only Botswana, Namibia, Zimbabwe and South Africa have their elephants on Appendix II of CITES which allows under certain circumstances controlled and limited trade in tusks. The leaflet then says that the management, maintenance and development of this ivory tag information system, commissioned by the Chinese State Forestry Administration, was praised by the international CITES community. The leaflet also describes how to distinguish elephant and mammoth tusk cross-sections, showing the typical crossed lines, and explaining that elephant ivory has an angle of 115 degrees while for mammoth tusks it is less than a 90 degree angle. In reality these lines are often hard to see and distinguish.



Figure 2. Only registered ivory shops are supposed to sell ivory items in mainland China and must display a framed certificate such as this one.

Survey results

Sources and prices of ivories in Guangzhou and Fuzhou

Illegal tusks from African and Asian elephants are still smuggled into China via various countries (Milliken et al., 2009). The only new legal ivory since 1990 imported into China arrived from southern Africa in 2009. In 2010, according to an ivory factory owner in Fuzhou, he obtained his tusks from the government in Beijing weighing 1–5 kg for Chinese Yuan (CNY) 2000 (USD 303)/kg for poor quality and CNY 3,500 (USD 530)/kg for high quality with an average of USD 455/kg. According to Hong Kong and mainland Chinese ivory traders, privately-owned tusks weighing 1–5 kg of high quality were USD 750/kg and 5–9 kg were USD 900/kg in southern China.

Guangzhou is close to Hong Kong, and as for ivory, it is an ideal trading partner for mammoth tusks. Mammoth ivory is legally imported from Siberia often to Hong Kong and then into China. Some factory owners go to Russia to obtain mammoth tusks that they import first to Hong Kong, as there is no import tax. In 2010 a Fuzhou factory owner paid USD 400/kg for A grade, USD 300/kg for B, USD 260/kg for C and USD 120/kg for D in Hong Kong. The grades are mixed during sales with A being usually 20%, B 20% and C with D 60% of the total.

Ivory workshops in Guangzhou

Known as ivory factories, two out of the three we visited were helpful. The government-owned Daxin ivory factory, in early 2011, had 40 to 45 carvers, up from about 20 in 2004. We saw 22 men and women carving tusks with two master carvers supervising the work. Only two were carving mammoth tusks. Three were making magic balls—a Guangzhou specialty with up to 52 intricately carved hollow concentric balls inside one another. Most were carving figures and figurines with manual and electric tools, depend-

ing on the stage of manufacture. The carvers work five days a week from 0830 to 1630 h with lunch from 1200 to 1300 h. Most earn CNY 2,000–3,000 (USD 303–455) a month, while about nine master carvers earn about USD 909–1,061 a month. The manager told us the factory produces 60% elephant ivory items and 40% mammoth ivory items per year by weight and has four shops selling ivory in Guangzhou.

We visited a factory that carves mainly cow bone and employs 50 carvers. They craft elaborate landscape scenes, intricate pagodas, ornate boats and famous magic balls. Carvers specialize, for example, on trees or flowers or people that are then stuck together to produce a large composite piece, similar to those made of ivory. This privately-owned factory was established after the 1990 ivory ban. It was recently refused government permission to carve elephant ivory. The factory last bought a supply of mammoth ivory in 2007 and hippo teeth in 2010.

We found the third factory with difficulty and counted 28 young ivory artisans. The factory has no master carvers. The carvers were making ivory bridges, which are curved tusks that are carved and positioned on a stand like a curved bridge, and bangles. The manager said they also use mammoth ivory, but we did not see any.

Retail outlets in Guangzhou

The main retail outlets remain in central Guangzhou in some of the luxury hotels and in the market areas for jade, jewellery and antiques (Table 1). Some of these are now in modern shopping centre buildings.

Mammoth ivory specialty shops had posters in the windows describing mammoths to customers, and with increased publicity, mammoth ivory has become an accepted substitute for elephant ivory. Some shops also displayed signs to say mammoth ivory items can be taken out of China but that the trade and use of elephant ivory are permitted in China only. Larger carvings were usually displayed in wall cabinets behind glass and small items under glass table-tops, including at the pay-desk.

There were 80 outlets seen selling elephant ivory (Table 2). These also sold jade, jewelry, antiques, souvenirs/gifts, mammoth ivory or were registered ivory specialty shops. Of these outlets, eight were selling ivory with ID cards and 72 outlets had no ID cards (25 selling new ivory and 52 selling old ivory with 5 selling both). We counted 6,437 ivory items on display: 3,206 newer items with no ID cards, 2,490 newer items with ID cards, and 741 old items with no ID cards. Thus 3,947 items (over half) had no ID cards and were thus illegal. Nearly all the items were carved in China. The most common were pendants, beads, figurines, bangles/bracelets and charms (in that order). Many of the old items for sale are rarely produced today, such as belt ornaments, hair brushes, containers for opium and incense, and games such as cribbage or mahjong. Vendors told us that their ivory sales were presently slow. Vendors sometimes told us their elephant ivory was mammoth, which does not require an ID card and that foreigners can export. When we asked for an ID card, vendors sometimes directed us to a verification office (mostly for gemstones) to prove the item's authenticity. The office had nothing to do with confirming its legal status. Generally, vendors tolerated our questions and photographs. There are many unregistered outlets with ivory that have not been officially inspected and some vendors freely admitted that their ivory was illegal; we were told that no confiscations had taken place.

Most of the newest illegal ivory items were bangles and necklaces. In three antique shops in the jade shopping area we were shown 21 hidden new illegal ivory figures, mostly about 30 cm, some in velvet-lined boxes. One vendor said his figures were new, and another claimed hers were old, but they had been stained to look old. (These were not counted in our survey, as they were not on display). One hotel gift shop had two bangles and a pendant on display with authenticity cards but not ID cards. The vendor explained they were expensive as the ivory was from

the rarer elephants of Thailand, not from African elephants. The vendor demonstrated this with torchlight on the ivory showing a pinkish glow. He was not concerned that the ivory was illegal. One Chinese man bought several large new illegal ivory objects, which the owner incorrectly told us were mammoth, from a jade shop and two Chinese women bought legal ivory pendants in an ivory specialty shop when we were there.

Prices varied considerably for similar items (Table 3). In small outlets, ivory items did not have price labels and bargaining was required. Pendants averaged at USD 66, cigarette holders were about USD 296, and name seals about USD 214. Figurines and figures ranged widely in price according to the outlet, workmanship and artistic value.

There were 30 outlets selling mammoth ivory (17 also selling elephant ivory items and 13 only mammoth). There were 6,541 mammoth ivory items (Table 2). Virtually all the objects were carved in China since 2004. Because of the brown outer layer, large cracks and stains, they are often uniquely shaped sculptures, not mass-produced figures as is possible with elephant ivory. Only grade A mammoth tusks produce white blemish-free items that resemble elephant ivory. Elephant ivory, being whiter, is more popular than mammoth in China. Prices of mammoth ivory items were thus slightly lower to encourage sales. We saw no mammoth ivory items being purchased.

Workshops in Fuzhou

In Fuzhou we interviewed ivory factory owners and managers who tolerated our 'market survey' because we were foreigners, they said. Fuzhou is famous for carving, especially the coloured Shoushan stone from the surrounding mountains. Wood and ivory carvers from all over China come to Fuzhou for employment. In the first of three factories we visited, there were 40 carvers, half from Fuzhou and the rest from elsewhere in China. They live in the factory buildings with their families. Both men and women carve. The work is intense, requiring very good eye sight and a steady hand, and people retire from this factory in their 40s to carve ivory trinkets from home. The factory produces carvings from mammoth tusks (50% by weight of total factory production), cow bone (35%) and ivory (15%). Chinese, we were told, like full mammoth carved tusks and the carvers had about 40

pairs to carve, the heaviest being 70 kg. We saw 28 carvers mostly working elephant ivory. They receive a salary of 1,500 to 5,000 CNY (USD 227 to 758) a month. About 10 carvers had recently left to carve wood, which is more profitable.

Factory sales were poor in 2009 due to the world recession, but improved in 2010 with an increase in Chinese buyers. After the 1990 CITES ban on ivory the government had removed the factory's elephant tusks (600 kg, compensating them only 200,000 CNY—about USD 24,000 or USD 40/kg at the time). The factory owner disputed the low price but to no avail. He has only managed recently to buy more tusks from the government. First he needed a permit to carve ivory. Then he needed permission

© Lucy Vigne



Figure 3. A carver in Fuzhou works with an electric drill on a whole mammoth tusk.

to buy tusks so he wrote to the government in May 2010. He had to wait until permission was granted in November 2010 to buy 1,500 kg of ivory. The delivery was scheduled in early 2011. The factory must process a limited supply: 120 kg from January to June, and 60 kg from July to December, but would like more. The factory must also submit designs to the government and afterwards a photograph of each item for its compulsory ID card. The items are sold to shops and private customers in China. About 90% of the factory's mammoth ivory sales are wholesale within China, the rest is mainly exported to USA and Europe. In 2009, a factory representative went to Italy

to sell mammoth tusks for 10,000 CNY a kg (USD 1,470) but the Italians would only offer less than half this amount so the sale did not occur.

We visited a second factory with 20 ivory craftsmen, 10 of whom were carving both elephant and mammoth ivory. The approaching 2011 Chinese New Year meant some had gone on holiday. If the craftsmen are not from Fuzhou, they are given accommodation in new housing blocks around the city; the factory provides lunch and supper. The factory office had two wall glass cabinets to show the items they make—one for mammoth and the other for elephant ivory carvings—and a glass-topped table for trinkets. In 2008 the factory owner went to southern Africa and bought tusks with the Chinese officials. The Chinese government only allows the factory to utilize 120 kg a year, although the owner would like to carve more. Chinese religious figurines of Kwan Yin and the Buddha made from both ivories are particularly popular. In 2010 the company, which also has an enterprise in Hong Kong, brought 3,000 kg of mammoth tusks from Hong Kong to use in this factory, having sold 1,000 kg of these tusks in Hong Kong. In 2009 and 2010 60% of the sales of mammoth ivory items were sold in China and 40% exported, mainly to France and the USA.

The third factory we visited in Guangzhou employed 50 to 60 mammoth ivory and bone carvers, having stopped utilizing ivory in 1990. The bones come mostly from buffaloes and cows in Sichuan province and cost 6 CNY (USD .92) per kg. The owner uses a few camel bones that cost 7–8 CNY a kg but he prefers buffalo and cow bone saying the quality is better. The owner had trained as an ivory carver, but due to the 1990 CITES ban he had diversified into substitute materials and has no intention of returning to ivory. He said some factories were closing as it is hard to employ skilled carvers nowadays with increased pressure for a family's one child to go to university rather than become an artisan. This factory produces large figures and furniture covered in thin bone rectangles. The main market for these is the USA where hand-made products are appreciated. There is no shortage of bones, but the factory needs more sales, and being luxury products his exports have been affected by the recent international recession. The factory also produces plain, polished mammoth tusks and mammoth ivory human and animal figures of a very high standard. There was a large display priced for sale. All were recognizably carved from mammoth

tusk pieces of varied shapes, with the distinct outer brown layer and blemishes making unique sculptures. The factory does not produce trinkets or jewellery from mammoth ivory. 'You would be wasting the material' the owner explained, being an artist. Most of the mammoth ivory items are exported and none is sold elsewhere in Fuzhou. People in Fuzhou prefer to buy stone carvings to support their local industry.

Ivory retail outlets in Fuzhou

A total of 39 outlets were counted selling ivory (Table 4): 16 displayed newer ivory carved since 1990 and 30 were selling old items (with 7 overlaps selling both). There were no ID cards. Most of the outlets also sold antiques, gifts or Shoushan stone carvings—the specialty of Fuzhou. There were no ivory specialty shops. We counted 97 newish ivory items carved since 1990 and 185 old ivory items. Most ivory objects were not priced and some vendors offered inflated prices (Table 5). Most common were name seals, figurines and belt ornaments that were worn in the past on traditional dress (in that order). Older ones ranged from the common belt ornaments to opera glasses and magnifying glasses. Vendors said they were slowly selling off their ivory stocks and not replacing them as turnover was too slow. During our week's survey in Fuzhou we saw no customers for any ivory. We saw 100 mammoth ivory items (Table 2). Nearly all (90) of the mammoth ivory offered for sale in Fuzhou was in the single factory shop. Again, we saw no buyers for mammoth ivory items.

Discussion

Trends in Guangzhou and Fuzhou since 2004

Compared with Esmond Martin's 2004 ivory survey in Guangzhou (Martin, 2006), the city has increased its production and retail sales of ivory carvings due to greater wealth and demand for luxury items in China. As well as tusks smuggled into China, the recent legal import of 62 tonnes of tusks from southern Africa has spurred on the ivory factories and retail trade in Guangzhou. The number of elephant ivory items seen for sale in Guangzhou rose by about 50% from 4,406 in 2004 to 6,437 in 2011 while outlets seen selling ivory rose a little from 72 to 80 (Martin, 2006). The proportion of jewellery items increased from 41% to 65% from 2004 to 2011 while figures and figurines

dropped from 27% to 14%. This implies that smaller items are more popular compared with 2004. In 2004 vendors predicted there would be an expansion in mammoth ivory items for sale in Guangzhou, which proved accurate with an over 100% increase from 3,064 items for sale in 2004 to 6,541 in 2011. The mammoth ivory boom in southern China is due not only to the expanding and wealthier population, but also to increased publicity about mammoths on television and from posters; Chinese and other buyers have now accepted mammoth ivory as authentic. Items can also be sold more cheaply in mainland China and for export compared to similar items made in Hong Kong due to lower wages and rents. Mammoth ivory is also



© Lucy Vigne

Figure 4. Carvers in this private ivory factory were using both electric and hand tools to produce elephant and mammoth ivory items.

legal to export from Hong Kong and mainland China.

In Fuzhou, like Guangzhou, the ivory factories have been spurred on in their production of ivory items after Fuzhou traders bought ivory in the 2008 southern African auctions. Items on display for sale, however, dropped from 737 in 2004 to 282 in 2011, although the number of outlets was 39 in both 2004 and 2011. There was a slight proportional increase in figurines from 2004 to 2011 as these items have not yet been sold off. Most ivory objects for sale in 2004 had gradually been sold and had not been replaced as demand for ivory items made in Fuzhou is higher elsewhere in China. In 2004 there had been six mammoth ivory items counted in the gift and antique shops compared to ten in 2011. A further 90

items were seen in a mammoth ivory factory shop in 2011 that was not visited in 2004, although the owner started production in 1992. Mammoth ivory items made in Fuzhou have always been mostly exported or sold elsewhere in China.

Legal and illegal sales in retail outlets

While ID cards are usually seen in the larger registered shops in Guangzhou, especially the government-owned ivory shops called Daxin, there are loopholes. Some items were displayed illegally with no ID cards—supposedly the cards had not been made yet. More commonly mammoth and ivory items were mixed. In a registered shop with separate cabinets for ivory and mammoth ivory, 15-cm Buddha carvings of both ivories that looked identical were together. Furthermore, some of these Buddhas had ID cards beside them, and others were in a drawer. It would be easy to re-use these IDs if not taken by a customer or if the buyer was mistakenly told his item was mammoth ivory. Another vendor in a registered shop claimed she did not know which items were which; most items looked like ivory but had no ID cards. For small items weighing less than 50 g, cards are usually stacked in a drawer, but again the customer may leave with his purchased item without the card, as we saw happen with a pendant sale in a registered shop. This would enable illegal ivory items again to be mixed in with legal items. Most of the outlets with ivory we visited were not registered to sell ivory and were selling items, both old and new, all illegally (with no ID cards) in Guangzhou and Fuzhou. Several vendors openly said their ivory was new and illegal and occasionally pretended new items were old; this suggests official inspections and confiscations have not taken place in most shops.

The increased production of ivory substitutes

Within China consumer demand for mammoth ivory is increasing as grade A makes an acceptable alternative to elephant ivory and other grades can produce unique sculptures of artistic merit. Only some objects, such as the many layered magic ball and chopsticks, cannot be carved from the more brittle mammoth tusks. Unfortunately, this look-alike material can be confused with elephant ivory and even experienced carvers admit they often need a magnifying glass to tell the

difference, especially for small items. Although some registered ivory shops have separate display cabinets for mammoth ivory and elephant ivory, others do not, and the two ivories can be mixed by mistake or purposefully. Some mammoth ivory specialty shops also sell ivory. Only mammoth ivory carvings that retain some bark-like exterior or have more acute angled cross-hatching visible on the base are identifiable.

Hippo teeth from Africa (on CITES Appendix II, which allows controlled trade) in 2010 were USD 120-150/kg wholesale, but few factories are buying them these days. In Guangzhou 10 outlets offered 114 hippo ivory items down from 457 in 12 outlets in 2004. Hippo teeth have become a less common substitute with the growth in mammoth ivory supplies. Being small in size, being on CITES Appendix II and having a tendency to crack makes them less popular compared with mammoth ivory. The most common hippo teeth items for sale in 2011 were figurines (54%) and bridges (29%). Some items are very expensive: a 20-cm landscape carving cost USD 3,000, and a 27-cm carved bridge was USD 3,787 in Guangzhou. In Fuzhou only one item, a hippo tusk, was seen for sale in one outlet.

There are several stores in the jewellery and jade markets of Guangzhou that sell quantities of inexpensive fake ivory beads, bracelets, necklaces, bangles, figurines and other common items. Vendors called the unknown material resin, plastic, elephant bone, camel bone, reconstituted ivory powder and sometimes ivory. Unlike plastic, this material can withstand a flame, has no smell like bone, and has curving lines (like map contours) running through it that partly resembles ivory. The temperature, texture and weight resemble ivory. Some vendors confuse this material with ivory—accidentally and/or purposefully—and we did see synthetic beads with ivory pendants selling as ivory necklaces.

Conclusion and recommendations

There is a large illegal trade in retail ivory items without ID cards in Guangzhou. Of the 6,437 ivory items counted for sale, 61% were illegal and 39% legal. Fuzhou's retail ivory items were fewer (282), but none had the compulsory ID cards. The government attempts to control the illegal trade. For Guangzhou and Fuzhou and their provinces only 25 designated retail outlets are permitted to sell ivory, but we found ivory items in 119 outlets in the two cities alone. The

Chinese government introduced an ID card system to allow the sale of legal ivory items. Many ivory items being sold, perhaps 63% of the items we counted in Guangzhou and Fuzhou, did not have an ID card in the shop. Furthermore, some vendors were selling elephant ivory as mammoth ivory.

The number of mammoth ivory items counted in Guangzhou was almost the same as ivory seen for sale. Mammoth ivory items for sale in Fuzhou were very few, less than half of those of ivory. Since 2004, in Guangzhou there has been about 100% increase in the number of mammoth ivory items seen which some say may have helped elephants as more customers are buying mammoth ivory items in place of elephant ivory. Both, however, are in increasing demand with the rising wealth and population in China. The number of ivory items surveyed in Guangzhou has risen by 50% since 2004.

What is needed is further enforcement of the laws in place. The small shops and stalls, especially in the jewellery/jade market area of central Guangzhou, which sell some of the newest illegal ivory, need regular inspections to stop their illicit trade. Old items need to be given ID cards as is the law. Officials need also to check frequently the registered ivory shops for ID cards. It would help if mammoth ivory items were required to have similar ID cards to reduce ivory being sold as mammoth; some shops display them but they are optional. It would also help prevent illegal ivory trade if the traders worked towards an effective association to help manage their ivory industry. One improvement would be for ivory and mammoth specialty shops to sell only one type of ivory, or at least a shop selling both to be clearly divided in order

to reduce mixing. As grade A mammoth and elephant ivory items are so similar, traders may wish to sell only mammoth ivory sculptures with some outer layer visible to reduce confusion with ivory, thus preventing the entry of illegal items that jeopardize their business. If Chinese officials and traders can tighten their controls and law enforcement, they can reduce the illegal ivory trade in China.

Acknowledgements

We would like to thank Columbus Zoo and the Aquarium Conservation Fund, Elephant Family and The Aspinall Foundation.

References

- Milliken T., Burn R., Sangalakula L. 2009. The Elephant Trade Information System (ETIS) and the Illicit Trade in Ivory: a report to the 15th meeting of the Conference of the Parties to CITES. Report for CITES CoP15 Doc.44.1 Annex (unpublished).
- Martin E., Stiles D. 2003. *The Ivory Markets of East Asia*. Save the Elephants, Nairobi and London.
- Martin E. 2006. 'Are we winning the case for ivory substitutes in China?' *Pachyderm* 40:88-100.
- Vigne L., Martin E. 2010. 'Consumer demand for ivory in Japan declines'. *Pachyderm* 47:45-54.

Table 1. Types of retail outlets and number of ivory and mammoth ivory items surveyed in Guangzhou in January 2011

Type	IVORY		MAMMOTH IVORY	
	No.	No. of items	No.	No. of items
Antique outlet	49	1,116	0	0
Department store	1	559	1	27
Gift outlet	4	23	1	2
Specialty outlet	17	4,500	28	6,512
Jewellery outlet incl. jade	6	232	0	0
Other	3	7	0	0
TOTAL	80	6,437	30	6,541

Table 2. Number of retail outlets seen with ivory, and mammoth ivory and number of items counted in January 2011

City	No. of outlets seen with ivory	No. of items	No. of outlets seen with mammoth ivory	No. of items
Guangzhou	80	6,437	30	6,541
Fuzhou	39	282	3	100

Table 3. Retail prices for recently-made ivory items seen in Guangzhou in January 2011

Item	Size in cm	Range in USD	Av. USD price
JEWELLERY			
Bangle	1	58-600	418
Bangle	2-2.5	430-1,150	845
Necklace, small beads		43-2,461	441
Necklace, large beads		170-2,462	731
Pendant	3-4	35-151	66
Ring, plain	0.25	3-18	10
FIGURINES			
Animal	5	258-554	414
	10	505-2,585	1,349
	20	-	10,769
Human	5	192-2,077	684
	10	563-2,277	1,145
	20	3,077-13,538	7,990
	40	-	13,846
	60	33,076-38,461	35,769
TUSKS			
Carved	20	-	32,307
	40	-	15,153
	60	25,538-30,769	28,154
Polished	40	12,308-19,692	16,000
	60	24,615-35,077	29,846
MISC.			
Chopsticks, pair	20	131-825	455
Cigarette holder	10-15	151-831	296
Name seal	2 x 6	92-554	214

NB: USD 1 = CNY 6.5

Table 4. Types of retail outlets and number of ivory and mammoth ivory items surveyed in Fuzhou in January 2011

Type	IVORY		MAMMOTH IVORY	
	No.	No. of items	No.	No. of items
Antique outlet	22	112	1	1
Department store	0	0	0	0
Gift outlet	15	152	1	9
Specialty outlet	0	0	1	90
Stone/ jade outlet	2	18	0	0
TOTAL	39	282	3	100

Table 5. Retail prices for recently-made ivory items seen in Fuzhou in January 2011

Item	Size in cm	Price in USD
JEWELLERY		
Bangle	2-2.5	554
Necklace, small beads		74
Pendant	3-4	132
FIGURINES		
Animal	5	1769
Human	5	1769
	10	1623
	20	9230
TUSKS		
Polished	20	923
MISC.		
Cigarette holder	10-15	400
Name seal	2 x 6	85

NB: USD 1 = CNY 6.5