

The USA's ivory markets—how much a threat to elephants?

Daniel Stiles¹, Esmond Martin²

¹ PO Box 5159, Diani Beach 80401, Kenya; email: kenyadan@kenyacoast.biz

² PO Box 15510, Nairobi 00503, Kenya; email: rhino@wananchi.com

Abstract

This article gives the principal findings of the first quantitative survey of the main towns and cities selling elephant ivory in the USA. The survey took place in 2006–7 with numbers and types of outlets, ivory items and prices recorded. Information was also collected on imports, craftsmen, buyers, law enforcement efforts and views about the future demand for ivory. We counted about 24,000 ivory items in nearly 660 outlets in 16 survey localities. While vendors say they are selling much less ivory nowadays, as demand has declined since the 1990 CITES ban, there has been a recent increase in ivory for sale on the Internet, with inadequate control measures in place. Most buyers are residents of the USA. New York City had the most items for sale, and most were antiques. East Asians have been smuggling in recently-carved items from Hong Kong and China in fairly significant quantities; these communities are selling worked ivory mainly in Honolulu, Los Angeles and San Francisco. Their outlets are not adequately checked and very few seizures have been made. These are probably the main outlets, along with the Internet, for recent (post CITES ban) ivory. Craftsmen work only part-time in ivory and number 120 to 200. They do repair work or craft small amounts and thus they require only small pieces of ivory, with enough being recycled in the USA to meet most of their demands.

Résumé

Cet article donne les conclusions principales de la première étude quantitative des villes principales qui vendent l'ivoire des éléphants aux Etats-Unis. L'étude a eu lieu en 2006–7, en enregistrant les chiffres et les types de débouchés, les articles en ivoire et les prix. Les informations ont aussi été rassemblées sur les importations, les artisans, les acheteurs, les efforts de la police et les opinions sur la demande future pour l'ivoire. Nous avons dénombré approximativement 24.000 articles en ivoire dans presque 660 débouchés dans 16 localités de l'étude. Alors que les vendeurs disent qu'ils vendent beaucoup moins d'ivoire actuellement suite à la baisse de la demande depuis l'interdiction par la CITES en 1990, il y a eu une augmentation récente dans l'ivoire en vente sur l'Internet, avec les mesures de contrôle inadéquates en place. La plupart des acheteurs résident aux Etats-Unis. La ville de New York avait le plus d'articles en vente, et la plupart étaient des antiquités. Les Est-Asiatiques passent en contrebande des articles récemment sculptés à partir de Hong-Kong et de la Chine en quantités assez considérables; ces communautés vendent principalement de l'ivoire travaillé à Honolulu, Los Angeles et San Francisco. Leurs débouchés ne sont pas suffisamment contrôlés et très peu de saisies ont été faites. Ce sont probablement les débouchés principaux, avec aussi l'Internet, pour l'ivoire récent (après l'interdiction de la CITES). Les artisans travaillent seulement à mi-temps sur l'ivoire et se comptent de 120 à 200. Ils font des réparations ou travaillent sur de petites quantités, donc ils exigent seulement de petits morceaux d'ivoire et assez en est recyclé aux Etats-Unis pour satisfaire la plupart de leurs demandes.

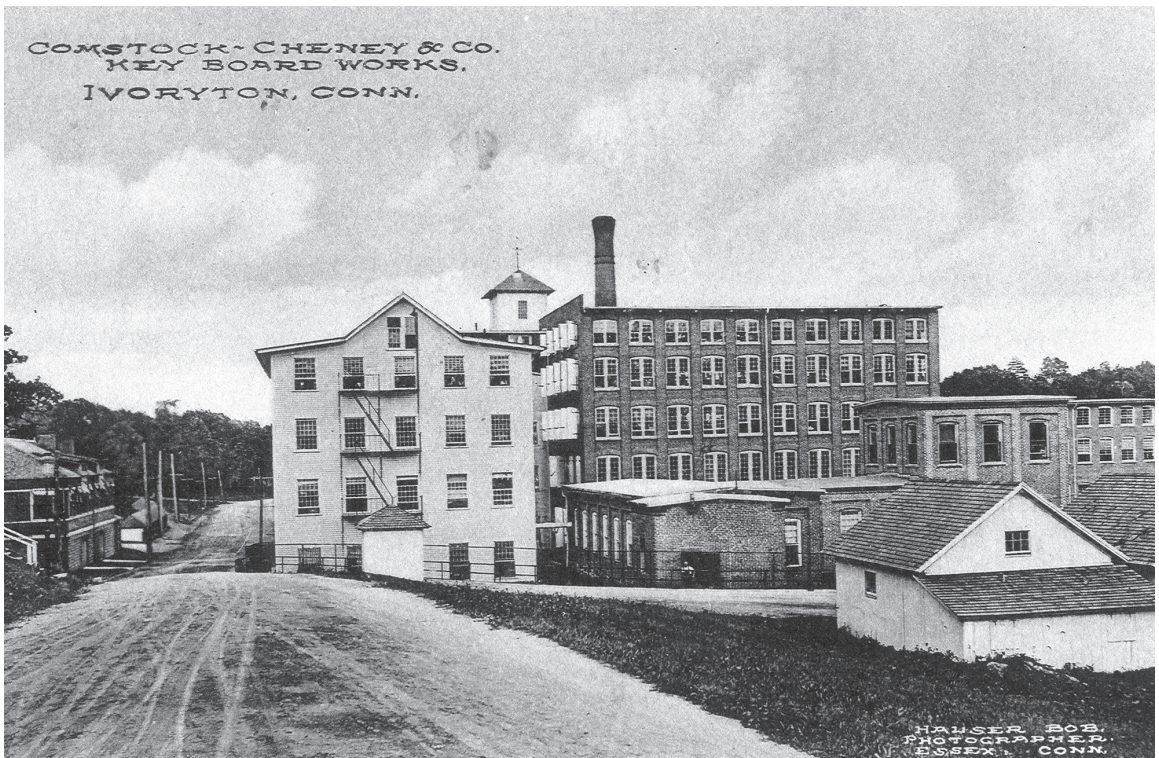
Introduction

This article summarizes an ivory survey in the USA conducted in 2006 and 2007. It is the fifth in a series of surveys depicting the status and trends of ivory markets. Previous surveys covered Africa, South and South East Asia, eastern Asia, and Europe (Martin and Stiles 2000, 2002, 2003, 2005; Stiles and Martin 2001, 2002, 2003, 2005). The USA is known for its buying power, with the largest economy in the world, and for its interest in ivory (Halligan 1979; Thomsen 1989; Humane Society of the United States (HSUS) 2002; Williamson 2004). The reported results differ from previous studies of ivory trade in the USA in that for the first time quantitative data are presented on the nature and scale of the internal US ivory market. From east to west, the 16 survey localities selected for their population size and/or wealth and tourist importance were: Boston/Cambridge, New York City, greater Washington D.C., Palm Beach, West Palm Beach, greater Miami, Atlanta, Chicago, Dallas, Houston, greater Phoenix, Las Vegas, San Francisco Bay area, greater Los Angeles, greater San Diego, and Oahu Island, Hawaii.

From these ivory market surveys, CITES Parties, government agencies and non-government organisations can assess the impact on elephant populations. We hope that future surveys using the same methodology will enable the standardization of monitoring of ivory markets. We assume a positive correlation between elephant killing and market demand for worked ivory, although releases of stored raw and worked ivory stockpiles must be taken into consideration. This will provide baseline data for international trade decisions and for assessing the criteria and standards that need to be met for domestic trade in ivory as called for in CITES Resolution Conference 10.10 (Rev CoP14).

Methods

The word 'ivory' in this article refers to elephant ivory unless specified otherwise. The term 'new' or 'recently-made' ivory refers to items manufactured after the USA African Elephant Conservation Act moratorium on ivory trade was introduced in 1989. The CITES ban followed in 1990. 'Old' ivory means items manufactured before



This 1912 photograph shows the west end of Comstock, Cheney and Company building, which was the one of the largest ivory keyboard factories in the world, located in Ivoryton, Connecticut. (Photograph courtesy of Donald Malcarne.)

1989. The age of items was assessed based on signs of wear, style, price and information provided by vendors. Because this method is hardly infallible, breakdowns into estimated pre- and post-1989 ages of manufacture are accompanied by the qualifier 'could have been'. Even if we judged an item to have been possibly made before 1989, this in no way attests to its legal status.

As for previous surveys, the investigators collected data on legislation, raw ivory imports and prices, worked ivory imports, craftsmen, numbers of retail outlets and ivory items, worked ivory prices, Internet retail ivory, buyers and law enforcement. Trends over recent years were studied regarding seizures, wholesale prices for raw ivory, numbers of craftsmen and numbers of retail outlets. Views were collected on ivory controls and future prospects of ivory trade. Interviews with vendors and craftsmen were necessarily opportunistic, depending on who was present in the retail outlet or workshop and how knowledgeable or willing they were to provide information. Some information was gleaned from Internet web sites and e-mails. The questions would vary, but the objective was consistent: to gather as clear a picture as possible of the indicator parameters.

In each town or city the investigators visited all major flea markets, antique markets, main shopping streets for antiques and crafts, department stores and luxury hotel gift shops. Ivory vendors were asked where and when they obtained their ivory and if they knew of any current ivory manufacture. We searched the Internet and commercial telephone directories for retail outlets and craftsmen, and obtained helpful information through the International Ivory Society and the International Netsuke Society (both based in the USA).

Results of the 2006–7 ivory market survey

Legislation

The USA was a founding Party to CITES, joining in 1975. The United States Fish and Wildlife Service (USFWS) is both the CITES Management Authority and Scientific Authority for the USA. The USFWS and the US Department of Agriculture, Animal and Plant Health Inspection Service share responsibility for enforcing all US laws related to CITES and wildlife conservation. CITES regulations and three federal laws mainly govern the ivory trade: the Endangered Species Act (ESA), the African Elephant Conservation Act (AECA) and the Lacey Act. The

responsibility for the importation of ivory falls to the US Customs and Border Protection Department, the USFWS and the US Department of Agriculture, Animal and Plant Health Inspection Service.

US regulations concerning ivory are complex, but in general no ivory in any form can be legally imported into the USA and used commercially, with two exceptions. Antique elephant ivory items may be imported or exported for commercial purposes when accompanied by a valid CITES pre-Convention certificate issued by the Management Authority of the exporting country. An antique is defined as a specimen at least 100 years old that has not been modified or repaired using ivory obtained since 28 December 1973 (the date of enactment of the ESA). Sport-hunted trophy tusks from four southern African countries in which elephants are listed under CITES Appendix II can also be imported with proper documents, but the ivory cannot legally be used commercially. The source code for imported ivory antiques should be P, meaning pre-



©Esmond Martin

Newly carved Chinese ivory netsukes, illegally imported, sell very cheaply in New York City, as seen here for less than USD 50.



©Daniel Stiles

A chain of ten 'antique' shops in San Francisco sold recent elephant and mammoth ivory imported from China, along with fake art deco ivory figurines.

Convention in age. Unfortunately, neither the USFWS nor CITES uses a specific source code for antiques in import-export documentation. Scanning thousands of records from LEMIS (Law Enforcement Management Information System) on worked ivory shipments from 1999 to June 2007 shows most antiques recorded under source code P, but many are W (from the wild) or U (unknown). The latter two codes are unacceptable in terms of legal ivory importation according to CITES and ESA provisions.

Raw ivory imports

Between 1990 and 2005, 3530 tusks legally entered the USA as either sport-hunted trophies or pre-Convention specimens, an average of 221 a year. Most were from African elephants, but a few were Asian. By law those that are not pre-Convention whole tusks must not be used commercially, but the fact that raw tusks continue to turn up for sale on Internet sites, at estate auctions and in shops suggests that they constitute an illegal source of raw ivory for carvers. In fact, some carvers admitted during this investigation to having purchased tusks on the Internet, some of which may have been imported after 1989. Most of the African tusks came from Zimbabwe, Botswana, South Africa and Tanzania in that order (Williamson 2004; UNEP-WCMC CITES Trade Database, in litt, June 2007). Additionally, between 1995 and 2005, African and Asian elephants have provided more than 2,400 pieces of raw ivory imports. Between 1995 and 18 July 2007 the USFWS LEMIS Database reported the seizure of 351 tusks, 15.2 kg of tusks, 724 raw ivory pieces and 495 g of raw ivory pieces.

Until 1989, bringing raw tusks with proper documents into the USA legally was easy. After that, as only antique tusks and hunting trophies could be imported, it is unlikely that much was smuggled in. Informants stated that the supplies of raw, semi-worked and broken pieces within the country are adequate for ivory craftsmen's needs. In fact, since ivory is cheaper in the USA than in Asia or Europe, there is little incentive to smuggle in tusks, though two recent cases were reported (Anon. 2008; Guevara 2008).

Raw ivory prices

Raw ivory prices in the USA vary considerably based on the size and quality of the tusk or tusk section. Craftsmen buy much of their ivory in semi-worked form as small slabs. Prices per kg for these pieces can be extremely high. They are sold based on size, not weight. The high price of smaller pieces reflects the savings a craftsman makes by eliminating labour and the need for specialized cutting tools. Similarly, smaller tusks often command a higher price per kg than larger ones, the opposite of what happens in Asia and Africa. Prices obtained through the personal networks of craftsmen seem to be considerably lower than those on some Internet web sites while prices for comparable items on web sites can vary significantly. Table 1 lists prices for various types of raw ivory found on the Internet.

Table 1. Prices of tusks, tusk sections and semi-worked raw ivory for sale on the Internet in the USA, 2006–7

| Type | Price USD/kg |
|--------------------------------|--------------|
| Scraps: Grade A chunky | 92 |
| Grade A flattish | 84 |
| Grade B flat | 31 |
| Hollow base of tusk 1-2 kg | 165 |
| Section of hollow base <1 kg | 121–330 |
| Solid tusk section <1 kg | 793–1,760 |
| <1kg tusk tip | 209–900 |
| Cut rectangular slabs <0.3 kg* | 150–930 |
| 1-5 kg tusk** | 346 |
| 5-10 kg** | 185 |
| 10-20 kg | 264 |
| >20 kg*** | 287–293 |

*The slabs measured 7.5–12.5 cm long, 2.5–5 cm wide and 0.3–1 cm thick.

**Only one pair of whole tusks of this size was found on the Internet.

***One price was obtained from an individual in e-mail correspondence.

Sources: International Ivory Society Newsletter No.12, 2007, <http://boonetradng.com>; <http://coastivory.com>; <http://ivoryhound.com> and <http://finetourange.com>.

Imported worked ivory

Between 1995 and June 2007 the USFWS LEMIS Database recorded more than 40,000 items imported legally in three categories: ivory carvings, piano keys and jewellery. These figures do not include almost 85 kg of worked ivory recorded by weight rather than number. During the same period, 8852 illegal ivory items and 15.2 kg of ivory items were seized according to the USFWS LEMIS. Most was imported from the UK (80%) followed by France (4%) and Canada (3%) (Williamson 2004; USFWS LEMIS Database, in litt, June 2007).

Large quantities of worked ivory enter the USA legally every year, mostly labelled as antiques. In addition, individuals probably smuggle in a significant quantity as personal effects, while other pieces enter by post and courier in mislabelled packages and occasionally by sea. This investigation discovered several web sites based abroad that sell worked ivory to American customers. TRAFFIC (Williamson 2004) described ways legal and illegal worked ivory enter the USA, and the Environmental Investigation Agency (EIA) found that Chinese dealers labelled ivory as 'crafts' or 'bone' (EIA 2007). The EIA found that the USA was a main destination for illegal worked Chinese ivory (EIA 2007). Our survey found a Chinese-owned wholesaler in Los Angeles and a Japanese-owned warehouse in Honolulu importing illegal ivory.

Craftsmen

Most artisans use materials other than elephant ivory, especially mammoth ivory, hippo teeth and warthog tusks. Some use ivory part-time to do repair work, while others use small ivory pieces for billiard cue parts, jewellery, scrimshaws, musical instrument parts and gun or knife handles. There are about 120–200 artisans using ivory in the USA today. The average craftsman used roughly the same annual amount of ivory in 1989 as in 2006–7. Thomsen estimated 5 kg/artisan per year, or seven tonnes a year in total (Thomsen 1989). The few craftsmen who would give information about how much ivory they used annually in 2005 or 2006 put the figure at 5–11 kg each. Thus, if there are at minimum 120 ivory artisans in the USA and on average each one uses 8 kg a year, then the estimated total annual consumption of ivory is 960 kg. This figure is an approximation and readers should treat it with caution as it is based on only a few artisans' reports.

Number of retail outlets and ivory items seen

Table 2 presents the aggregated data for the minimum number of retail outlets selling ivory and the number of ivory items found for the 16 localities surveyed in the USA.

At least 24,004 ivory items in 657 outlets were found in the 16 localities surveyed in the USA. The largest number, by far, was found in New York City and most items were old. The second largest was in the San Francisco Bay area, primarily because of its large Chinatown area that has strong links with Hong Kong; many of these items were probably recently made. The greater Los Angeles area had the largest number of outlets selling ivory seen in the USA with the third largest number of items; again, many of the ivory items appeared recently made. The relatively small city of Honolulu held a surprisingly large amount of ivory, which could again be attributed to the large East Asian community selling items to the many



©Esmond Martin

There are more than one hundred craftsmen in the USA who occasionally use ivory, such as this man working on a piece in 2006.

tourists; well over half the ivory seen there was probably recently imported from China. The quite small communities of Palm Beach and West Palm Beach

Table 2. Number of retail outlets and ivory items seen in the USA, 2006–7

| Place | Number of outlets | Number of items |
|-------------------------|-------------------|-----------------|
| New York City | 124 | 11,376 |
| San Francisco Bay Area | 49 | 2777 |
| Greater Los Angeles | 170 | 2605 |
| Oahu Island | 23 | 1867 |
| Palm Beach | 10 | 885 |
| Greater Miami | 11 | 865 |
| Boston & Cambridge | 20 | 758 |
| Greater San Diego | 29 | 684 |
| West Palm Beach | 14 | 529 |
| Dallas | 49 | 322 |
| Houston | 44 | 267 |
| Chicago | 18 | 255 |
| Greater Washington D.C. | 25 | 236 |
| Las Vegas | 21 | 212 |
| Greater Phoenix | 28 | 208 |
| Atlanta | 22 | 158 |
| Total | 657 | 24,004 |



©Daniel Stiles

Many antique shops, as here in Dallas, sell an eclectic selection of ivory from Europe, Asia and Africa.

had the highest per capita quantities of ivory seen because some of their wealthy residents and visitors are ivory collectors; most of this ivory was antique and thus legal. Chicago, the third largest city in the USA, had a surprisingly small amount of ivory, mostly old. The remaining cities surveyed were substantial in population (more than 350,000), but had small to moderate scale ivory markets. Overall, one could say that the eastern USA had a much higher proportion of pre-1989 ivory items than the west.

Retail worked ivory prices

Prices varied according to the quality and age of the item, the type of outlet and the country of manufacture. The higher prices were usually for antiques from Japan or Europe, or occasionally from China. Many of the more recently made items found, especially on the west coast—probably smuggled in from Hong Kong and mainland China—were relatively cheap. Items from Africa, except for unusual antiques, usually commanded the lowest prices. Honolulu, New York City, Palm Beach and the San Francisco Bay area had the most expensive worked ivory.

Internet retail ivory

Many Americans prefer to buy ivory on the Internet rather than from shops. Dozens of web sites sell or auction ivory in the USA and abroad. One Shanghai company advertised on eBay more than 1,000 netsukes and other carvings made from elephant and mammoth ivory. A seller in Bujumbura, Burundi advertised on a Taiwan-based web site that he sells ivory animal figurines made in Angola, Congo and the Central African Republic. Another company with two Taiwan-based web sites sells from a retail outlet and advertises in US antiques magazines. It is highly unlikely any of these suppliers' ivory could either be imported legally into the USA, or exported in compliance with CITES from China, Taiwan or Burundi (HSUS 2002). TRAFFIC (Williamson 2004) and IFAW (2007) have conducted extensive studies of the wildlife trade on the Internet and have documented how several country eBay sites auction thousands of ivory items every year. TRAFFIC (Williamson 2004) documented how ivory was sent illegally to the USA from China labelled as bone, mammoth ivory or antique items. As a result of adverse publicity associated with the latest IFAW report, eBay announced in June 2007 that it was banning cross-border ivory sales on all its Internet

auction sites (Max 2007).

This investigation found nine web sites based in the USA buying and selling Appendix I-listed raw ivory, six of those selling elephant ivory. It also uncovered 18 web sites based in the USA that sell worked ivory exclusively. Some of these businesses do not provide a postal or street address and thus remain anonymous. Most of these web sites display disclaimers that the ivory they sell is pre-ban and complies with CITES and ESA regulations, but it is hard to know if these disclaimers are valid. Auction houses that sell ivory on the Internet were too numerous to count, but this investigation found many of them, based both in the USA and in other countries (mainly the UK). The manner in which they advertise ivory for sale, the method of marking it for shipment, the ports of entry used (for international sales) and the documentation provided rarely comply with CITES or ESA provisions.

Buyers of worked ivory

Most buyers are US residents who choose antique ivory items. New York City also attracts small numbers of buyers from Europe and Canada. Japanese visitors form an important component of buyers in Honolulu. Non-American East Asians do not normally shop for ivory in San Francisco or Los Angeles, as most of the ivory originates and costs less in East Asia. Although Las Vegas attracts many foreign visitors, they do not spend time going to the city's rather ordinary antique markets and shops. Buyers of ivory on the Internet tend to be artisans who, apart from raw ivory, choose broken ivory items, and also Americans who are collectors of ivory antiques.

Law enforcement

The USA has a good record for seizures in accordance with CITES and US regulations concerning ivory and other wildlife trade at its borders compared with other countries (Milliken et al. 2007). The USFWS forensics laboratory (<http://lab.fws.gov>) is developing various technical methods by which ivory from African and Asian elephants and mammoths can be distinguished and

Table 4. Average wholesale prices in USD/kg for small ivory tusks of 3–4kg in the USA, 1979–2007

| Tusks, USD/kg | 1979 | 1989 | 1990 | 2000 | 2002 | 2004 | 2005 | 2006 | 2006–7 |
|-------------------------------|------|------|------|------|------|------|------|------|--------|
| a) no inflator index | 63 | 100 | 132 | 176 | 165 | 200 | 220 | 187 | 204 |
| b) plus GDP inflator for 2007 | 142 | 141 | 182 | 197 | 178 | 209 | 227 | 190 | 204 |

it has prepared an online manual that deals exclusively with all types of ivory identification by visual inspection (<http://lab.fws.gov/ivory.php>). This will help to reduce illegal ivory imports and apprehend offenders who label elephant ivory as mammoth ivory.

The main weaknesses in the control of illicit ivory sales are imports, interstate movement of purchased ivory, Internet sales and the lack of inspections of retail outlets for illicit ivory. Regarding imports, thousands of people arrive by air hourly and cannot all be checked; millions of packages posted abroad arrive daily and many are not marked according to the ESA and Lacey Act while others do not arrive at airports designated by the USFWS as wildlife product entry points. The same applies to goods arriving by sea. As for movements across state borders, laws are unclear. The government keeps no statistics on ivory movements within the USA, but it is likely that worked ivory is moved about frequently, virtually unchecked. Customers buy ivory on the Internet, at auctions or from antique-dealers, often from sellers who live in different states or even abroad and who simply send the items by post or courier. Concerning retail outlets, state authorities are responsible for their inspection and that of other businesses that might deal in ivory, but checks and seizures are rare. Ivory is sold openly in markets, shops and periodic antique fairs. Even in places where the probability of illegal ivory being sold is high (e.g. San Francisco, Los Angeles and Honolulu), state agencies do not work with the USFWS to conduct spot inspections of outlets. CITES Resolution Conference 10.10 (Rev CoP14) recommended that Parties that import and trade elephant ivory implement several trade regulation and control measures. The USA has not yet implemented

Table 3. Number of ivory seizures recorded by ETIS for the USA, 1990–2005

| 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Total |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 452 | 264 | 234 | 172 | 112 | 199 | 218 | 194 | 221 | 182 | 227 | 185 | 157 | 148 | 172 | 174 | 3311 |

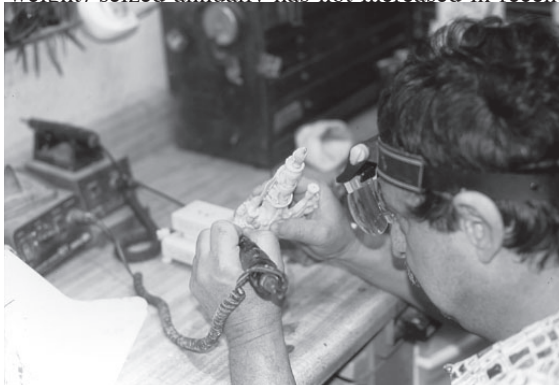
Source: Milliken et al. 2007

any of these recommendations.

Trends in USA ivory trade

Raw ivory seizures and prices

As this is the first systematic survey of the USA's ivory markets, only limited data are available with which to assess trends. Table 3 shows the number of ivory seizures (raw and worked) made in the USA and reported to Elephant Trade Information System (ETIS) from 1990 to 2005. The ETIS data make no distinction between ivory from Asian and African elephants. In the first half of the reporting period (1990–1997) there were 1845 ivory seizures made and in the second half (1998–2005) there were 1466 seizures. If one assumes all things equal (level of vigilance, accuracy of reporting, methods of ivory shipment etc) this would indicate that illicit ivory imports have dropped off marginally in recent years. The continued large number of seizures indicates as well, however, that a demand for ivory persists in the USA, even if, as the ETIS report presumes, a high proportion of the seizures made were personal effects lacking the correct paperwork, especially jewellery. The USA reports by far the highest number of seizures of ivory to ETIS than any other country. In weight, however, the country comes eighth. Between 1998 and 2006 ETIS recorded 10,817 kg for the USA, less than for the amount seized in China (39,375 kg), Tanzania (27,686 kg), Hong Kong (14,695 kg), Kenya (13,418 kg), Zambia (13,556 kg), Japan (12,425 kg), Nigeria (11,312 kg) and Singapore (10,895 kg) (Tom Milliken, TRAFFIC, pers. comm. October 2007). The ETIS analysis indicated that the amount of ivory (by weight) seized annually has not increased in recent



©Esmond Martin

Artisans in the USA sometimes restore ivory antiques using broken ivory items such as old piano keys and scrap ivory.

years in the USA.

Table 4 presents data on wholesale raw ivory prices from 1979 to 2007 obtained from published sources and from interviews with ivory craftsmen. There has only been a modest increase in price over the past 30 years for 3–4 kg tusks in the USA. The price of raw ivory rose about 30% in 1990, the year of the CITES ivory ban. Since 1990 prices for 3 kg tusks, and presumably other raw ivory categories, have approximately doubled (ivory craftsmen, pers comm, 2006), although in inflation-adjusted terms, the price has risen very little (see Table 4).

Regarding a trend in numbers of craftsmen, there were 1000 in 1979 and 1400 in 1989, declining sharply to 100–500 in 2004. Since then numbers have fallen to about 120–200 in 2006–7 (Thomsen 1989; Williamson pers. comm, May 2007). Williamson's 2004 estimate, however, of up to 500 artisans is probably too high (craftsmen, pers. comm. 2006–7).

Shop owners and managers believe that the numbers of retail outlets selling ivory items declined between 1989 and 2006–7, although no hard data existed before this survey. This decline was due to the ban on ivory imports, the overall decrease in demand and a reduction in the number of collectors.

Views on the CITES 1990 ivory ban and the 1999 ivory auction

Those vendors and craftsmen who were asked about the 1990 international ivory trade ban were aware of it, and most believed that the resulting publicity campaigns did indeed reduce ivory demand in the USA. Some artisans no longer carve ivory in case bad publicity affects their business. They said that the 1999 CITES-approved ivory auction in southern Africa had no effect in the USA as also shown by three studies that found the auctions affected neither ivory demand nor elephant poaching (Stiles 2004; Milliken et al 2004; Bulte et al. 2007).

Most ivory craftsmen asked thought that the USA should permit a legal and regulated international ivory trade, which would eliminate the demand for ivory from poached elephants. A common view was that natural elephant mortality and the shooting of problem elephants produced enough ivory to supply the global markets. None of the vendors or craftsmen spoken to said that they would knowingly buy or sell ivory from poached elephants, but that it was difficult to know the age and source of most raw and worked ivory.

Craftsmen and vendors' views on ivory markets and their future

Craftsmen in the USA do not make ivory figurines or other works of art because labour is too expensive and similar items are readily and cheaply available on the Internet and in outlets. Repair work, however, does have a future because the USA holds so many ivory objects. There is also a future in using ivory for billiard cue parts, inlaying billiard cues, manufacturing knife and pistol handles, making musical instrument parts, making ornamental scrimshaw items and crafting jewellery. Each of these items requires only a small amount of ivory each year. Craftsmen who use wood, mammoth ivory and silver will continue carving ivory if the other materials provide enough work for them. This is probable since restoration work will always be in demand. The small ivory requirements of craftsmen in the USA are easily satisfied. The Internet, which has revolutionised the ivory business, offers many old ornamental tusks and broken ivory items every day, which artisans can use for making new items and for restoration work.

Concerning vendors' views, overall they are not optimistic about future sales of ivory. Most Americans are not interested in buying ivory as conservationists and the media have made ivory unpopular since the international ivory ban in 1990. The periodic antique fairs and weekend markets are recycling much of the existing ivory in the USA, reducing demand for new items made by craftsmen in the USA. Vendors are also aware that many ivory collectors are old and will not be replaced as ivory is no longer fashionable and because imports now require much paper work. Perhaps the ivory business is still fairly active in the Palm Beach area as some collectors from the New York area have moved to Florida and many wealthy people go there for holidays and to shop. Nevertheless, the residents of other cities show little interest in ivory. There are exceptions, such as Honolulu and San Francisco with their large East Asian communities. In general, ivory sales at retail outlets are falling because most remaining ivory buyers do not want to go out to shops, preferring to browse on the Internet where sellers post hundreds of ivory items for sale daily.

Conclusions

As measured by the indicators, the USA has the second largest ivory market in the world, after China-Hong



©Daniel Stiles

Honolulu city on Oahu Island in Hawaii had the largest proportion of recently made Chinese ivory seen in the USA.

Kong. The illegal proportion of it, however, is much smaller than any country in Asia and most countries in Africa. The USA ivory market poses a minimal threat to elephants, but the US government could greatly reduce illegal ivory activity by implementing CITES recommendations.

Acknowledgements

The authors are grateful for funding to Care for the Wild International, the John Aspinall Foundation, Humane Society of the United States and Save the Elephants. Thanks are also due to many who contributed their knowledge to this project and to the monograph (Martin and Stiles 2008), and to Lucy Vigne for work on this article.

References

- Anon. 2008. Paying a high price for a dying art. *International Ivory Society Newsletter* No. 30.
- Bulte E, Damania R, van Kooten G. 2007. The effects of one-off ivory sales on elephant mortality. *Journal of Wildlife Management* 71(2):613–618.
- Canada Newswire. 2007. Environment Canada investigation into illegal importation of 30,000 pieces of African elephant ivory leads to prosecution. 12 October.
- EIA. 2007. *Made in China*. Environmental Investigation Agency, Washington, D.C., USA and London, UK.
- Guevara D. 2008. Art dealer jailed, accused of smuggling ivory tusks to Elyria. *Cleveland Plain Dealer*, 10 February.
- Halligan J. (1979). A Brief Examination of the American Ivory Trade. Unpublished report for the National Wildlife Federation, Washington, DC, USA, 21 May.
- HSUS. 2002. *An Investigation of Ivory Markets in the United States*. The Humane Society of the United States, Washington, D.C., USA.
- IFAW. 2007. *International Survey. Bidding for Extinction*. International Fund for Animal Welfare, Yarmouth Port, Massachusetts, USA.
- Martin E, Stiles D. 2000. *The Ivory Markets of Africa*. Save the Elephants, Nairobi, Kenya and London, UK.
- Martin E, Stiles D. 2002. *The South and South East Asian Ivory Markets*. Save the Elephants, Nairobi, Kenya and London, UK.
- Martin E, Stiles D. 2003. *The Ivory Markets of East Asia*. Save the Elephants, Nairobi, Kenya and London, UK.
- Martin E, Stiles D. 2005. *Ivory Markets of Europe*. Care for the Wild International, West Sussex, UK, and Save the Elephants, Nairobi, Kenya and London, UK.
- Martin E, Stiles D. 2008. *Ivory Markets in the USA*. Care for the Wild International, West Sussex, UK, and Save the Elephants, Nairobi, Kenya and London, UK.
- Max A. 2007. eBay bans cross-border ivory sales. *The Associated Press*, 5 June.
- Milliken T, Burn R, Sangalakula L. 2007. *Elephant Trade Information System (ETIS) and the illicit trade in ivory: a report for the 14th Meeting of the Conference of the Parties to CITES*. CoP14 Doc. 53.2, CITES, Geneva, Switzerland.
- Stiles D. 2004. The ivory trade and elephant conservation. *Environmental Conservation* 31(4):1–13.
- Stiles D, Martin E. 2001. Status and trends of the ivory trade in Africa, 1989–1999. *Pachyderm* 30:24–36.
- Stiles D, Martin E. 2002. The trade in African and Asian ivory in South and South East Asia. *Pachyderm* 33:74–87.
- Stiles D, Martin E. 2003. The trade in African and Asian ivory in East Asia. *Pachyderm* 35:82–99.
- Stiles D, Martin E. 2005. The African and Asian ivory markets in Europe: a survey of five countries. *Pachyderm* 39:77–90.
- Thomsen J. 1989. Ivory trade and market profile of the United States. In: *The Ivory Trade and the Future of the African Elephant*. (ed. Cobb, S.). Ivory Trade Review Group, Oxford, UK.
- Williamson D. 2004. *Tackling the Ivories: the Status of the U.S. Trade in Elephant and Hippo Ivory*. TRAFFIC North America and World Wildlife Fund-USA, Washington, DC, USA.