

Title: Prohibiting the commercial dealing of ivory in the UK IA No: RPC Reference No: RPC-4171(2)-DEFRA Lead department or agency: Defra Other departments or agencies:	Impact Assessment (IA)			
	Date: 23 May 2018			
	Stage: Final			
	Source of intervention: Domestic			
	Type of measure: Primary legislation			
Contact for enquiries: Defra Wildlife Team				
Summary: Intervention and Options				RPC Opinion: GREEN

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANDCB in 2014 prices)	One-In, Three-Out	Business Impact Target Status
- £74.6m	- £74.6m	£7.4m	In scope	In scope

What is the problem under consideration? Why is government intervention necessary?

Elephants are being poached and killed at unsustainable rates for their ivory. Although international conventions outlaw trade in recently poached ivory, the illegal trade and poaching has increased since 2007. UK Government intervention is necessary because international and domestic markets are not factoring in the total value of elephants to society or long-term conservation. The expectation is that the renewed UK leadership in this area and a commitment to close legal ivory markets would reduce the demand for ivory and thus the incentive to poach. It would also close loopholes in current legislation which present opportunities to launder poached ivory through legal markets, thereby indirectly encouraging continued poaching of elephants. Only Government can send a clear global signal that the trade in ivory is not acceptable and that the killing of elephants for their ivory will not be tolerated.

What are the policy objectives and the intended effects?

1) Ensure the UK plays a leading role in ending the illegal trade in ivory. A total ban on the commercial dealing of ivory in the UK that contributes directly or indirectly to elephant poaching would send the clearest possible signal that the UK does not tolerate the poaching of elephants for their ivory and demonstrates that we are world leaders in the fight against the ivory trade. Renewed UK leadership in this area will help encourage other countries to close their markets, reduce demand and stop poaching.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0: Represents the “do nothing” option of retaining the status quo. Currently, the international trade in ivory is controlled by rules set by the Convention on the International Trade in Endangered Species (CITES). These rules are implemented in the UK through EU Wildlife Trade Regulations.

Option 1: Proposal for a total ban on ivory sales in the UK, and proposal to prohibit the import and export of ivory for sale to and from the UK, including intra-EU trade to and from the UK, with strictly limited and, carefully targeted exemptions.

Will the policy be reviewed? It will/will not be reviewed. If applicable, set review date: Month/Year
May/2023

Does implementation go beyond minimum EU requirements?	Yes			
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: n/a		Non-traded:	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY:  Date: 22/05/2018

Summary: Analysis & Evidence Policy Option 1

Description: A total ban with limited exemptions, on the commercial activities concerning items made of, or containing ivory; within the UK, to and from the EU, and their import to, or re-export from the UK.

Price Base Year 2018	PV Base Year 2018	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: - £53.3m	High: - £102.3m	Best Estimate: - £74.6m

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£1.77m	2018	£6.0m	£53.3m
High	£3.77m		£11.4m	£102.3m
Best Estimate	£2.52m		£8.4m	£74.6m

Description and scale of key monetised costs by 'main affected groups'

There are approximately 2,500 antique dealers/stalls, and 1,000 auction houses in the UK, many of whom will deal in ivory to some extent. These businesses will incur a cost of inventory in the stock of ivory items that can no longer be sold, and will forgo profit on ivory items that would have been sold on an ongoing basis. Businesses will also need to familiarise themselves with the new arrangements, and specifically the precise nature of the exemptions.

Other key non-monetised costs by 'main affected groups'

Some private individuals would also be affected, particularly those who have invested in, or inherited, works of antique ivory. They will lose sales and stock value from a ban.

The extent of these costs is limited by carefully targeted exemptions in the following areas: musical instruments; rarest and most important items of their type; items containing only a small proportion of ivory (a "de minimis" exemption); portrait miniatures; and sales to and between museums.

Government will incur costs in the monitoring of exemptions, and in the enforcement of the ban more generally. The registration system for items which are exempt from the ban will operate on a cost recovery basis.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate				n/q

Description and scale of key monetised benefits by 'main affected groups'

In view of the nature of the policy objectives and data limitations, benefits are not monetised.

Other key non-monetised benefits by ‘main affected groups’

The illegal ivory trade, like other illicit trades, fuels corruption and instability, particularly in developing countries. The UK has had a leading role in preserving international biodiversity. Contributing to saving wild elephants will have a direct beneficial effect on our international reputation. There will be the direct benefit that UK citizens will gain from the knowledge that the UK is playing its part to bring an end to the illegal trade in ivory that is threatening to bring extinction to African elephants.

Indirect beneficiaries are UK eco-tourism businesses, particularly those specialising in safaris, who stand to benefit from the increased awareness and interest in elephants that a ban will bring. We would also expect some significant indirect benefits to accrue both to affected businesses and to the wider sector as a result of substitutability/adaptability.

Key assumptions/sensitivities/risks rate (%)

Discount

3.5

A key assumption is that other countries will be positively influenced by the UK lead and will implement their own bans, which will reduce demand, prices and therefore poaching and killing of elephants.

With regards to the impact on affected sectors, no single comprehensive data source exists of the domestic ivory trade. Our cost estimates are therefore derived by triangulating multiple sources of varying robustness and specificity. The uncertainty implied by this is accounted for in the low-high ranges provided.

A risk with this option is that exempted activity or products, if not strictly limited and targeted, undermine the intended effects of signalling an end to trade in ivory.

We assume there will be full compliance with the regulation.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: £7.4m	Benefits: n/q	Net: - £7.4m	
			£37.0m

Final stage Impact Assessment – Prohibiting the commercial dealing of ivory in the UK

Evidence Base (for summary sheets)

Introduction

1. This Impact Assessment sets out Defra's final assessment of the case for banning the commercial activities of ivory in the UK that contributes directly or indirectly to elephant poaching, with the ultimate aim of addressing the decline in the number of wild elephants.
2. It sets out both a strong moral case and an economic rationale for the UK to show international leadership in this area. The preferred option is for a ban with limited and carefully targeted exemptions. This Impact Assessment has been revised and updated following the consultation period, and now includes a monetised estimate of the domestic business implications of ending the trade in ivory. However, it is recognised that information is still limited in this regard, and the estimate therefore carries a degree of uncertainty.

Summary of Consultation Responses

3. Formal public consultation on banning UK sales of ivory took place between 6th October 2017 and 29th December 2017. Over the 12 week consultation period, Defra received over 70,000 responses. These included responses from members of the public, and a wide range of organisations, including antique dealers, auction houses, musicians and conservation NGOs.
4. The consultation sought to understand the public's views on the topic – including on the proposed exemptions, gather evidence on the effect the proposed ban will have, and seek views on how a ban could be enforced. This includes its effect on elephant conservation, the natural environment and businesses, as well as its economic and cultural effect.
5. The consultation highlighted that the overwhelming majority of respondents supported the implementation of a ban. Views differed on the need for, and the precise nature of exemptions to the proposed ban. Defra has taken account of this extensive feedback and has revised the scope of the proposed exemptions. Further to this, this final stage IA provides further detail on the proposed compliance and enforcement regime.
6. All responses have been thoroughly analysed and information has been used to revise assumptions in this IA where possible, as discussed in detail in the relevant sections.

Problem under Consideration

Existing Conventions and Rules

7. The UK is already bound by international rules on the trade of ivory through the Convention on the International Trade in Endangered Species (CITES). CITES is an

international conservation agreement which aims to ensure that trade in endangered species does not threaten their survival.¹

8. In recognition that they are threatened with extinction, the African (*Loxodonta africana*) and Asian (*Elephas maximus*) elephants are listed in CITES Appendix I, affording them the highest level of protection under CITES. The exceptions to this are the elephant populations of South Africa, Namibia, Botswana and Zimbabwe, which are currently listed on CITES Appendix II because they have large and/or stable populations. However, these four populations have an annotation placing the equivalent of Appendix I rules on international trade in their ivory. These Appendix listings afford elephants the highest level of protections under CITES.
9. The commercial use of ivory is prohibited under the CITES Convention and associated EU Regulations (commonly referred to as EU Wildlife Trade Regulations); however, the relevant Management Authority may issue certificates which provide an exemption from the prohibition if certain grounds are satisfied – this must be on a case by case basis.
10. The commercial use of ivory specimens acquired before the date on which the provisions of CITES started to apply to ivory is permitted (1990 for African elephant ivory and 1975 for Asian elephant ivory) only if the necessary permits have been issued.
11. Despite these measures, trade in ivory and elephant poaching have increased significantly since 2007. The poaching of some African elephants has reached an unsustainable level. In total, the population of savannah elephants declined by an estimated 144,000 from 2007 to 2014, with the rate of decline reaching 8% per year over the period 2010-2014.² According to the International Union for Conservation of Nature, the population of African elephants is down to around 415,000 - 550,000.³
12. The natural reproduction rate of elephants is about 5% per year. Therefore the rate of decline is clearly unsustainable. Elephant population surveys estimate that, without changes, some populations face the risk of local extinction.⁴ Figure 1 shows estimates of the numbers poached for 2010-12 by region in Africa.

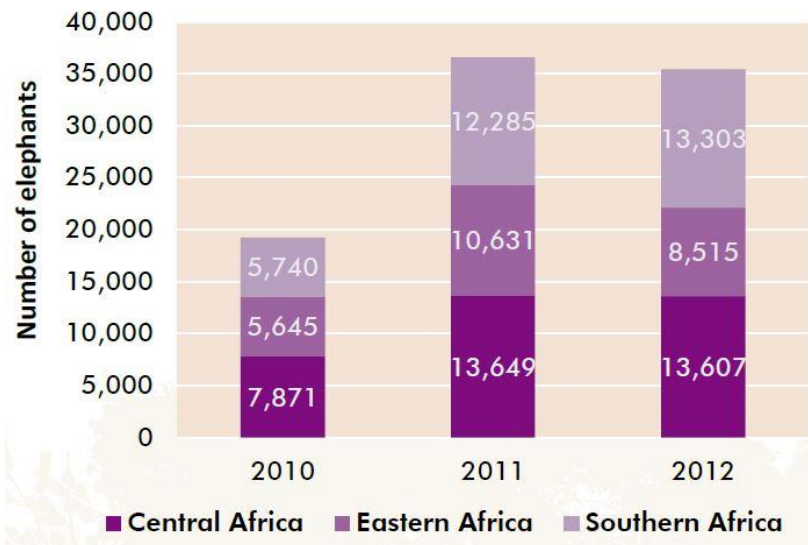
¹ The convention entered into force in 1975 and was ratified by the UK in 1976. CITES is implemented in the European Union primarily through Council Regulation (EC) No. 338/97 on the protection of species of wild fauna and flora by regulating trade, and Commission Regulation (EC) No. 865/2006, which lays down the detailed rules concerning implementation of Council Regulation No. 338/97. Together these regulations establish the legal framework within which the UK must implement its CITES obligations. The EU Regulations are directly applicable in all Member States. However there are certain areas, such as enforcement, where the EU Regulations require national measures, or where Member States retain the power to adopt additional measures. These are currently enacted in UK law by the Customs and Excise Management Act 1979, the Control on Trade in Endangered Species (Enforcement) Regulations 1997 and the Control on Trade in Endangered Species (Ports of Entry) Regulations 1985, and by various Statutory Instruments amending the COTES Regulations. Defra and its Executive Agency, Animal and Plant Health Agency are the UK CITES Management Authority and are responsible for ensuring that CITES is properly implemented in the UK through a licensing regime.

² Chase MJ, Schlossberg S, Griffin CR, Bouché PJC, Djene SW, Elkan PW, Ferreira S, Grossman F, Kohi EM, Landen K, Omondi P, Peltier A, Selier SAJ, Sutcliffe R. (2016) Continent-wide survey reveals massive decline in African savannah elephants. *PeerJ* 4:e2354 <https://doi.org/10.7717/peerj.2354>

³ <https://www.iucn.org/news/species/201609/poaching-behind-worst-african-elephant-losses-25-years-%E2%80%93-iucn-report>

⁴ Chase MJ, Schlossberg S, Griffin CR, Bouché PJC, Djene SW, Elkan PW, Ferreira S, Grossman F, Kohi EM, Landen K, Omondi P, Peltier A, Selier SAJ, Sutcliffe R. (2016) Continent-wide survey reveals massive decline in African savannah elephants. *PeerJ* 4:e2354 <https://doi.org/10.7717/peerj.2354>; https://cites.org/eng/news/pr/some_positive_signs_african_elephants_continue_face_serious_threats_280716

Figure 1: Estimated Number of Elephants Poached in Africa by Region⁵



13. Local communities in Africa have little incentive to protect these animals which are often considered pests because of the damage they can cause to homes and farmland.⁶ Elephants are threatened by increasing loss of habitat as a result of rapid human population growth and agricultural expansions. 29% of the existing elephant range is affected by this problem and the projections are that this figure may increase to 63% by 2050.⁷
14. At the same time, the high price of ivory on the illegal market provides a strong incentive for poachers to kill wild elephants.⁸ This increase in illicit trade has been attributed to the increased demand for ivory in Asian markets⁹, mainly China and Thailand.
15. Evidence suggests that the illicit ivory trade is increasingly in the hands of organised crime.¹⁰ Over recent years, the number of ivory seizures and also their average size has increased. Shipments of over one hundred kilograms of raw ivory have become more common since 2007,¹¹ suggesting that illicit trade is increasingly in the hands of

⁵ UNODC (2016) *World Wildlife Crime Report: Trafficking in Protected Species*

⁶ Taruvinga A and Mushunje A: Society's perceptions of African elephants and their relative influence towards the conservation of elephants. *APCBEE Procedia* 10 (2014) 299 – 304

⁷ See www.globio.info and https://cites.org/eng/news/pr/some_positive_signs_african_elephants_continue_face_serious_threats_280716

⁸ The price of a kilogram of raw ivory in China rose from \$750 (£437) in 2010 to \$2,100 (£1225) in 2014 and an elephant tusk can weigh 5-10 kg and in some cases even more. The price of ivory has, however, dropped to \$730 in February 2016 with the announcement of the Chinese ban on ivory from 2017. Source: "[Analysis of demand-side reduction initiatives](#)" The Royal Foundation, 2014 and "[Decline in the legal ivory trade in China in anticipation of a ban](#)" by Vigne, L and Martin, E, Save the Elephant (2017) for the latest data.

⁹ Milliken, T., Burn, R.W., Underwood, F.M. and Sangalakula, L. (2012). [The Elephant Trade Information System \(ETIS\) and the Illicit Trade in Ivory: A report to the 16th meeting of the Conference of the Parties to CITES](#). CoP16 Doc. 53.2 (Rev. 2) page 14. CITES, Geneva, Switzerland.

¹⁰ Elements of this supply chain are criminal syndicates and rebel militias engaged in many other criminal activities. See Underwood FM, Burn RW, Milliken T (2013) Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data. *PLoS ONE* 8(10): e76539. doi:10.1371/journal.pone.0076539

¹¹ T. Milliken, R.W. Burn, F.M. Underwood and L. Sangalakula: "Monitoring of illegal trade in ivory and other elephant specimens". Report presented to CITES Sixteenth Meeting of the Conference of the Parties. Bangkok (Thailand), March 2013.

powerful organisations, who smuggle container-loads of ivory at a time. The presence of such powerful groups can undermine state authority and an economy's tax base. These criminal organisations not only threaten wild elephant populations but also the stability of the countries where they operate.

Response in Other Countries

16. In response to the current poaching crisis, several countries have imposed stricter measures on the ivory trade in an effort to preserve wild elephants. In February 2015 China – the world's largest market for ivory - imposed a one year ban on the import of African elephant ivory carvings (not including pre-Convention items) and from March 2016 the ban also included pre-Convention tusks, ivory products and hunting trophies. As of 2018, all trade in ivory and ivory products in China is illegal.¹²¹³
17. In June 2016, the USA introduced new restrictions on imports and exports of ivory items and banned trade between States for antiques less than a hundred years old. In June 2016, Hong Kong proposed to phase out domestic ivory trade in five years and banned international trade of pre-Convention ivory. In Europe, France and Germany no longer issue re-export certificates for pre-Convention raw ivory and in January 2014 the European Parliament called on Member States to "*introduce moratoria on all commercial imports, exports and domestic sales and purchases of tusks and raw and worked ivory products until wild elephant populations are no longer threatened by poaching*".
18. In May 2017, the European Commission published guidelines recommending Member States suspend re-exports of raw ivory to non-EU countries from 1 July 2017, and ensure a strict interpretation of the provisions in EU law relating to intra-EU trade in ivory and the (re)export of worked ivory. The Commission has also recently consulted on the nature of the EU ivory trade, to inform development of possible additional measures at EU level.¹⁴

The UK Ivory Market

19. In global terms, the UK ivory market, albeit for antique ivory, is surprisingly large. This stems from the widespread production and import of elephant ivory for personal and household products in nineteenth century Britain, as well as traditional decorative uses. In a survey of 2004, the UK had the greatest number of outlets openly selling ivory products in the world, and ranked ninth in terms of the numbers of items available.¹⁵
20. Whilst most of the UK's ivory trade is legal, the UK has featured in several "cluster analyses" of ivory seizure data by CITES' "Elephant Trade Information System" (ETIS) since 2002, suggesting that "the UK has consistently played a role in illegal ivory trade globally". Between 2010 and 2014, some 154 seizure records were reported by the UK to ETIS, a considerable increase on the previous five year period, although less in

¹² We understand that China has an exemption for "ivory relics", although the exact definition of this term is not clear.

¹³ BBC News (2018) China's ban on ivory trade comes into force, 1st January 2018. Accessed via <http://www.bbc.co.uk/news/world-asia-china-42532017>

¹⁴ Public consultation on ivory trade in the EU. Consultation outcome available at: https://ec.europa.eu/info/consultations/public-consultation-ivory-trade-eu_en

¹⁵ Traffic, *A rapid survey of UK ivory markets* (2016), p. 3

volume terms than Germany and France. Seizures were made not only in the UK, but also in other countries that involved the UK either as a country of export, re-export, transit, or destination.¹⁶ However, the importance of taking action on the UK domestic ivory market goes beyond its current weight in ivory trade flows: it would send the clearest possible signal that the UK does not tolerate the sale of ivory and takes the strongest possible position against the ivory trade. This will enable the UK to influence other countries, especially those with larger ivory markets, to take action; and to remove any basis of the currently legal ivory trade providing a cover for illegal trade.¹⁷

Rationale for Government intervention

21. Although the purpose of the intervention is moral and geopolitical, and so not primarily economic, there is an economic rationale for government intervention as the market fails appropriately to protect elephants. Elephants are not being protected to the extent expected by UK citizens and required to maintain sustainable population levels. The relevant market failures are open-access resources, externalities, and asymmetric information.

Open Access Resources

22. Elephants are being killed at a rate which is unsustainable and can lead to the extinction of African elephant populations. In this way, the African savannah elephant population has some characteristics of an open-access resource. This is when too much of the resource is being harvested for private gain, ignoring the long-term value of the resource and failing to take into account the welfare losses to those who do not want African Savannah elephants to become extinct. Economists call this a common open-access resource (i.e. rivalrous and non-excludable) which gives rise to the phenomenon known as “the tragedy of the commons” in which individual self-interest drives resource depletion to the detriment of all.

Externalities – loss of wider economic welfare

23. African elephants can be valued by local communities through the revenue generated from eco-tourism. Recent modelling suggests that the decline in elephant populations has a significant negative effect on tourism visits and revenues (around £25m annually) in the savannah areas of east, southern and west Africa.¹⁸ The modelling considered visitor data and spatial changes in elephant populations. It demonstrates that investments in anti-poaching efforts can offer positive economic returns in terms of increased tourism. In forested areas, the tourism gain is smaller. This highlights that “use values” are only one part of the “total economic value” of conserving elephants.
24. Yet the direct financial incentives for local communities to maintain elephant populations can be weak. This is particularly the case when herds are a direct cost to local communities through damage to agricultural lands and competition for resources.¹⁹ At

¹⁶ Traffic (2016), pp. 2, 29-30. According to the report the role of the UK in the ivory trade is that of a transit country. This means that the UK is not the final destination for most of the ivory going through its ports and airports but an intermediate step in its voyage to the markets in Asia. However, the quantity of ivory taking this route is small when compared to that going directly from Africa to Asia.

¹⁷ For example, see Traffic (2016), p28.

¹⁸ Naidoo et al, Estimating the economic losses to tourism in Africa from the illegal killing of elephants, *Nature Communications* (2016)

¹⁹ Taruvinga A and Mushunje (2014). Elephants are also threatened by increasing loss of habitat as a result of rapid human population growth and agricultural expansions. 29% of the existing elephant range is affected by this problem and the

the same time, the ivory in their tusks generates more financial value after they have died, providing a strong incentive to poachers who generally have limited sources of income. This commercial value consists only of the private value to buyers of ivory products and fails to account for wider use and non-use “externalities”: the economic and cultural values that current and future generations place on the existence of wild elephants.

25. These values are varied and significant. Wild elephants have major artistic and symbolic value for African peoples, and their local ecological role is also often overlooked. They play a critical stabilizing role in their ecosystems: as “landscape architects” that control and create habitats for other wildlife to flourish, thus diversifying local savannah and forest ecosystems; and as “gardeners” or “horticulturalists” that disperse undigested seeds and nuts that enriches the soil and provides fodder for smaller mammals and birds, so maintaining rich plant diversity.²⁰
26. UK citizens value the planet’s biodiversity and, in particular, the existence of wild populations of elephants in the “range” countries of Africa. According to an opinion poll carried out by TNS in September 2016, 85% of the UK population support a complete ban on all trade in ivory in the UK and 80% support their Government pushing for the closure of ivory markets around the world.²¹ Although not a representative sample, the findings of the consultation, both in terms of the level of response, and the proportion of respondents who expressed support for the proposals, adds further weight to this argument.
27. Such support is also revealed by widespread membership of conservation charities and organisations concerned with endangered species and elephants in particular, as well as popular engagement with nature television programmes, and visits to zoos, aquariums and wildlife parks.²² This value, or what in economics is called “welfare” or “utility”, can also be explicitly given a monetary “willingness to pay” value. Whilst we are not aware of any studies estimating UK citizens’ willingness to pay to preserve elephants, research conducted in Sweden shows that 72% of the households in Sweden were willing to pay an average of 332 Swedish krone in 1996 to save the elephants²³. This is equivalent to £32 which, allowing for inflation, is equivalent to over £45 per household. This indicative figure demonstrates the value members of an affluent West European country places on these animals. Yet monetary valuations of this kind may not adequately capture the less tangible but deep-seated cultural values held by people for iconic features and species of the natural world, such as ancient woodland or elephants, for example in which the species is seen as a signifier of a greater whole, spatially or temporally, in which both humans and wildlife participate.²⁴

projections are that this figure may increase to 63% by 2050 See www.globio.info and https://cites.org/eng/news/pr/some_positive_signs_african_elephants_continue_face_serious_threats_280716

²⁰ <http://www.savetheelephants.org/about-elephants-2-3/importance-of-elephants/> ; <https://www.wwf.org.uk/wildlife/african-elephants>

²¹ <https://medium.com/@GreyLondon/politicians-must-heed-overwhelming-public-demand-to-close-all-domestic-and-international-ivory-c4837faae128#.bqjj1cez8>

²² For example, according to the British and Irish Association of Zoos, more than 25 million people visited British and Irish zoo collections each year, that is more than one in three of the British and Irish population. <https://biaza.org.uk/>

²³ Johansson, M.V.: “Valuing a Peripheral Environmental Amenity. The Swedes’ Willingness to Pay for the Survival of the African Elephant” PhD Dissertation. Department of Economics. University of Umea (Sweden), 1997.

²⁴ For example, Defra’s assessment of the economic, social and cultural value of ash trees https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200396/pb13906-chalara-socio-economic-framework.pdf (pp. 19-21) and forthcoming research by Defra on the cultural value of pollinator insects. An in-

28. Despite the manifold ways in which individuals express their value for elephants and endangered species through normal market mechanisms and charitable transactions, only Government can address the underlying market failures and legal issues.

Asymmetric Information

29. Despite existing legal restrictions, the UK ivory goods market is vulnerable to being unable to distinguish between legal and illegal trade, because only goods which have been worked before 1947 can be sold and exported without a permit. Although the UK ivory market has not been directly linked to the trade in recently poached ivory, sales of more recent ivory products and particularly raw tusks potentially present a greater risk in terms of opportunity to pass off illegally-sourced ivory as legitimate. The coexistence of legal and illegal ivory in the market creates confusion and some consumers might think they are buying something legal when that is not the case. This is the economic problem of asymmetric information between buyers and sellers potentially creating economically inefficient outcomes.
30. A number of studies have highlighted the fact that a legal domestic ivory market provides opportunities for laundering of illegal ivory.²⁵ A report published by the United Nations Office on Drugs and Crime (UNODC) in 2010 noted that “the trade in illicit ivory is only lucrative because there is a parallel licit supply, and ivory can be sold and used openly. Ivory would lose much of its marketability if buying it were unequivocally an illegal act”.²⁶
31. The antique trade relies on the seller correctly and honestly assessing the ivory to be pre-1947 and worked. It is disproportionately costly for the trade to use scientific testing such as carbon dating as a means of establishing an item to be worked pre-1947. The cost of testing (£400 or more)²⁷ is more than the value of many items on sale and requires extracting a sample from the item which can also irreparably damage small or fine items due to the size of the sample needed. Carbon dating is also far less accurate with regard to items created after 1945, due to the atmospheric impacts of the atomic bombs dropped at Hiroshima and Nagasaki.
32. Recent research highlights the fault lines in the domestic ivory trade. For example, in field research by Traffic²⁸, casual ivory market traders had limited awareness of legal requirements regarding ivory. Whilst all traders understood that there was a cut-off year for what was considered “antique” (ivory acquired and worked before 1947), some did not know which year this applied to (p.19). The University of Portsmouth interviewed dealers who “stated that they either know of dealers or auctioneers who would sell post-1947 ivory, or that they had witnessed illegal ivory being sold in the UK” (p.53). Similar issues were highlighted by Two Million Tusks, who found that many auction houses

depth assessment of these sorts of shared social values can be found in the UK National Ecosystem Assessment and its Follow-On Study, work packages 5 and 6. <http://uknea.unep-wcmc.org/>

²⁵ For example, Bennett, E. L. (2015). Legal ivory trade in a corrupt world and its impact on African elephant populations. *Conservation Biology*, 29(1), 54-60. And Harvey, R. (2015). Preserving the African elephant for future generations. South African Institute of International Affairs

²⁶ UNODC (2010). The globalization of crime: A transnational organized crime threat assessment. (pg. 278) Vienna, Austria: United Nations Office on Drugs and Crime.

²⁷ Cox (2017), “*The Elephant in the Sale Room: An Inquiry into the UK Antiques Trade’s Sale of Ivory*”, p53, School of Law, University of Portsmouth

²⁸ Traffic (2016), p.31.

were unable to comply with the legal requirement to demonstrate proof of age for all ivory pieces dated pre-1947.²⁹

33. Furthermore, worked ivory products from the UK can currently be sent to key consumer markets with the relevant CITES permit. These same consumer markets are a frequent destination for freshly poached and illegally-sourced ivory, so any supply of UK worked ivory items, and particularly more recent items, to these markets may become mixed with illegally-sourced ivory, supporting demand which drives poaching and illegal trade.
34. Trade records from importer and exporter countries and territories can be obtained from the CITES trade database. This data highlights discrepancies in the number of transactions reported by trading countries. For example, the UK reported the re-export of 17 tusks for commercial purposes between 2005 and 2014, compared to 109 tusks from the UK reported by importers.³⁰

Policy objectives and intended effects

35. The ultimate policy aim is to end poaching of elephants, but this is not wholly within the UK's power. There are two key intended effects:
 - i. Close domestic demand and supply
 - ii. Reduce global demand and supply with a view to total closure
36. Renewed UK leadership in this area and a commitment to close all legal ivory markets would support this aim by reducing the demand for ivory and thus the incentive to poach. It would also close loopholes in current legislation which present opportunities to launder poached ivory through legal markets, thereby indirectly encouraging continued poaching of elephants. An announcement that the UK will ban all sales of ivory in the UK that contribute directly or indirectly to the poaching of elephants, would send a strong message globally, reasserting the UK's leadership role on conservation issues, and pressuring others to follow suit.
37. As mentioned above, a large majority of the UK population support a complete ban on all trade in ivory in the UK and around the world. The domestic ivory market is already a restricted one. Ending the UK's domestic trade in ivory can be expected further to reduce opportunities and incentives for recently poached ivory to infiltrate the legal ivory trade.
38. In 1989, to protect declining wild African elephant (*Loxodonta africana*) populations, an agreement was reached under CITES to effectively ban international trade in ivory. By placing African elephant ivory on Appendix I, parties to the Convention limited trade in ivory to "exceptional circumstances."³¹ In recent years, a number of important studies have been conducted which evaluate the impact of this ban.
39. A 2004 study reviewed the available quantitative evidence and concluded that the evidence supports the view that the trade bans resulted generally in lower levels of ivory

²⁹ Two Million Tusks (2017) Ivory: The Grey Areas. A study of UK auction house ivory sales – The missing evidence. Available at www.twomilliontusks.org

³⁰ Traffic (2016), p. 28.

³¹ CITES, "How CITES works", accessed via: <https://www.cites.org/eng/disc/how.php>

market scale and elephant poaching than prevailed prior to 1990.³² This paper was built on in 2009, with similar findings noted; Lemieux and Clarke found that the ban helped to increase the overall number of elephants in Africa by about 140,000 between 1989 and 2007.³³ However, as in the earlier study, it is highlighted that the ban has not benefited every country alike. The authors attribute this to poachers in these countries having greater access to 'unregulated' domestic markets for ivory.

40. In recent years, several countries have introduced or proposed the introduction of stricter measures on the ivory trade (see paragraphs 16-18); it is too early to conclusively determine the impact of these measures, but there are some tentative positive signs. Save the Elephants analysis of the wholesale prices of elephant tusks in China, found that the average price had fallen from \$2,100 per kg in early 2014, to \$730 per kg in February 2017.³⁴ They argue that one of the main reasons for this steep decline was the threat of the domestic ivory trade ban and fears of improved law enforcement.³⁵
41. Some commentators have hypothesised that relaxing trade bans in illegal goods allows legal supplies to competitively displace illegal supplies. A one-time legal international sale of ivory was unexpectedly announced in 2008, and provides an opportunity to investigate this proposition. A 2016 study analysed this event empirically and found that this singular legal ivory sale corresponded with a significant, permanent, and geographically widespread increase in the production of illegal ivory through elephant poaching, with a corresponding 2009 increase in seizures of raw ivory contraband leaving African countries.³⁶ These findings demonstrate that partial legalization of a banned good can increase illegal production of the good because the existence of legal markets may influence the nature of illegal markets.
42. By bringing an end to the UK domestic ivory market, the UK will play its part in the global movement to take action on the ivory trade, in line with actions taken by others, in turn encouraging other countries to take action, and depriving poachers of their market. Such leadership by example can be very influential on other countries. For example, the UK's Climate Change Act 2008 has influenced other countries to adopt similar carbon budget approaches to climate change mitigation.³⁷
43. This proposal will also complement other action that the UK Government is taking to tackle the Illegal Wildlife Trade (IWT) and to protect elephants from poaching. At the Hanoi Conference on IWT, which took place in November 2016, the UK announced an additional £13 million to tackle IWT, doubling our previous investment. A number of new initiatives were also announced, including:

³² Stiles, D. (2004) The ivory trade and elephant conservation. *Environmental Conservation* 31 (4): 309–321

³³ Lemieux, A. M., & Clarke, R. V. (2009). The international ban on ivory sales and its effects on elephant poaching in Africa. *The British Journal of Criminology*, 49(4), 451-471

³⁴ 'Dramatic Changes in China's Ivory Trade' Save the Elephants, March 29 2017. Accessed via <http://www.savetheelephants.org/about-ste/press-media/?detail=dramatic-changes-in-china-s-ivory-trade>

³⁵ Vigne, L. and Martin, E. (2017) Decline in the Legal Ivory Trade in China in Anticipation of a Ban, Save the Elephants. Accessed via http://www.savetheelephants.org/wp-content/uploads/2017/03/2017_Decline-in-legal-ivory-trade-China.pdf

³⁶ Hsiang, S. and Sekar, N. (2016) Does Legalization Reduce Black Market Activity? Evidence from a Global Ivory Experiment and Elephant Poaching Data. NBER Working Paper No. 22314

³⁷ "It has also been directly influential with other national governments in deciding their own approaches to climate legislation." <https://sandbag.org.uk/2017/04/06/uk-climate-change-act-standing-strong-time-change/>

- Expanded British Military anti-poaching training for African park rangers;
- A project with China to deliver joint training to law enforcement officers in southern Africa to stop smugglers; and
- Additional funding for Interpol to expand their work with key nations, tracking and intercepting illegal shipments of ivory and other illegal wildlife products.

Policy options

44. Our preferred policy option is for a complete ban, in the UK, on commercial activities concerning ivory that could directly or indirectly fuel the poaching of elephants. By commercial activities, we mean: buying, selling or hiring ivory, offering or arranging to buy, sell or hire ivory, keeping ivory for sale or hire, exporting ivory from the United Kingdom for sale or hire, and importing ivory into the United Kingdom for sale or hire. Alongside this ban it is proposed that there will be the following carefully targeted exemptions in order to mitigate potentially disproportionate business impacts.
- A musical instrument exemption with a 20% volume limit and a 1975 backstop;
 - A de minimis exemption where the ivory is incidental and integral to the item, with a 10% threshold by volume and 1947 backstop. This recognises that in some items the ivory content is incidental to the attraction and value of the item. For such items the ivory content is also likely to be integral, meaning it could not be removed and refashioned.
 - An express exemption for portrait miniatures;
 - An exemption for sales to/between museums that are accredited by the UK Arts Councils (UK), or the International Council of Museums (internationally). There may be some cases where museums may want to sell or exchange items containing ivory to/with other museums. This also recognises that there may be some items owned by private individuals that are of such importance they may be valuable to museums;
 - An exemption for rarest and most important items of their type with a fixed backstop date of 100 years before the Act enters into force, which would be assessed by a pool of specialists, including with knowledge of the illegal wildlife trade, as being of “museum quality” and that the sale would not contribute to poaching.
45. The proposed package of exemptions has been refined following consultation feedback, and has been developed to exclude from the prohibition those items which do not contribute directly or indirectly to poaching and to allow the UK to take robust and radical action to tackle elephant poaching.

Other options considered

46. We previously considered the following policy options:

Non legislative approaches

47. Non-legislative approaches were considered. This included stopping issuing permits for post-1947 ivory. It is thought, however, that the UK government may need to continue to accept permits from other EU member states for post-1947 ivory, which would create loopholes that could be abused. Issuing “passports” for larger items was an additional option, as was the provision of additional information and guidelines to the trade. These options would allow a large proportion of UK ivory trade to continue and therefore not achieve our stated objectives. We believe this would therefore continue to create

opportunities for the laundering of modern ivory and for the UK market to contribute to the international demand for ivory. The policy intention is to remove these opportunities and, therefore, stronger actions would be required to further restrict the trade, demonstrate that the UK does not believe ivory should hold a commercial value and to put the UK at the forefront of global action to protect elephants from poaching.

Date-based restrictions

48. Consideration was given to date-based restrictions including: on sales of all items of worked³⁸ ivory produced after 1947 and on all items of worked ivory produced after 1918 (100 years). This, however, would not support the policy objectives and would not achieve the intention of taking a global leadership role on this issue.
49. A date-based restriction, such as those outlined above, would allow a large proportion of the domestic antique ivory trade to continue thus allowing a large proportion of domestic supply and demand for ivory to continue, undermining a key policy objective. It is believed that allowing this trade to continue would also contribute to the ongoing demand for ivory internationally by lending some semblance of legitimacy to the overall ivory trade, which in turn helps sustain illegal activity. A date-based restriction would also not significantly close opportunities to launder new ivory and it would fail to remove the financial value of ivory, a key objective of the policy. A date-based restriction would, therefore, not send a strong global signal that the UK considers the trade in ivory to no longer be acceptable. Such a restriction would be weak in comparison to other bans in place internationally.
50. Current domestic regulations rely solely on date-based restrictions for all worked items of ivory, meaning this applies to a high proportion of items. This has been criticised by conservation NGOs because of the volume of ivory it allows to be traded, and by enforcement bodies on the grounds of the difficulty in correctly identifying the age of an item and therefore opening opportunities to launder modern ivory. It can be challenging to accurately date an item without the assistance of potentially expensive carbon dating technology, which has limited application to smaller or finer items and could impose a significant financial burden on the Police if relied upon significantly. It is therefore desirable to limit the application of date-based restrictions to avoid broad application of subjective or expensive dating approaches and, where these are applied, the onus should be put on the seller to provide the evidence of age.

Policies pursued in other countries

51. An objective of the UK ban is to have one of the strongest measures in the world. The USA, France and China all announced restrictions on their ivory markets in 2016. The UK government, therefore, followed these examples to inform the UK's approach and make sure the UK ban goes further in the restrictions it applies domestically. Each example provided different models and lessons which were considered in the design of the UK ivory ban, however, no one model was considered fully appropriate for UK application, for the reasons outlined below.
52. Each of the countries listed above have applied exemptions to their ban, for example for musical instruments, for items containing a small amount of ivory and for antiques. These exemptions and the supporting research has been used to inform the proposed exemptions for the UK ban. The French have applied a date based ban, which will not be

³⁸ Worked specimens are defined as specimens that were significantly altered from their natural raw state for jewellery, adornment, art, utility, or musical instruments, to the satisfaction of the management authority concerned, acquired in such conditions. Such specimens shall be considered as worked only if they are clearly in one of the aforementioned categories and require no further carving, crafting or manufacture to affect their purpose

an approach which will be applied in the UK, as previously outlined. China has an exemption for “ivory relics”, although the exact definition of this term is not clear.

53. Further to the USA’s federal ban, the states of California and New York have applied stricter restrictions on their ivory trade, for example reducing the de Minimis threshold from 50% (at federal level) to 5% in the state of California and 20% in the state of New York. The ban applied in the state of California is considered to be the ‘gold standard’ by conservation NGOs. These examples were considered in the UK government’s proposals although the final scope of the exemptions was primarily informed by the consultation response.
54. Conservation NGOs and enforcement bodies do not support the USA’s exemption for antiques, defined as over 100 years old but, critically, applied on a rolling basis. This approach is overly complicated to enforce, and it may also encourage hoarding of ivory, undermining the key policy objectives.

Effects of a “Do nothing” option

UK share of international trade increases

55. Under a “do nothing” scenario pre-convention ivory would continue to be traded in the UK. As other countries impose greater restrictions on ivory trade the UK role as a transit country will grow, which may also increase the UK’s unwilling role in the illegal trade, putting wild elephants at continued risk and damaging our reputation as a country committed to conserving biodiversity and wild elephants in particular.

Increase illicit trade and poaching

56. Legal ivory trade can increase the illicit trade and poaching because:
 - a) There is confusion whether antiques contain illegal ivory or not. Banning trade will increase the stigma of buying ivory reducing demand in both the legal and illegal markets. Also, those who buy ivory as an investment will cease to do so if they have concerns around whether they can find a market outlet for it.
 - b) There is suggestive evidence that legal ivory is used by smugglers to mask the illicit ivory trade (see paragraph 30). Smugglers use legal permits to launder the product of elephant poaching by increasing the quantity over what was originally certified in permits to trade ivory or by using these permits several times. As the legal market shrinks and permits become more exceptional, laundering illegal ivory becomes more difficult and expensive.
 - c) As the amount of legal ivory diminishes and becomes more easily identifiable monitoring and enforcing becomes easier.
57. Allowing legal trade of ivory items means missing an opportunity to curb the illicit trade and make poaching less profitable. This means elephants will continue to be killed, threatening the future sustainability of elephant populations.

Undermine other international efforts

58. The UK has played a leading role in encouraging global change on this issue but currently lags behind other countries in taking action. By doing nothing, the UK risks undermining the effectiveness of other countries’ efforts. As long as buyers believe that there will be places where their ivory can be sold there will be demand for ivory and investment and consumption habits will change more slowly than they otherwise would. Countries including the USA, China and France have already implemented or

announced stricter measures to fight the illicit ivory trade – although none is as robust as the approach the UK is proposing. If the UK were to implement a total ban of UK sales that contribute directly or indirectly to the poaching of elephants, this would put the UK at the forefront of ivory measures. Over the last few years the UK has been a global leader in efforts to tackle the illegal wildlife trade, and failing to keep up with the pace of global change on this issue will see our reputation and international working relationships in this area suffer. Moreover, there are concerns that, given our leadership role, some countries who have yet to take action on their domestic ivory markets may use a lack of action in the UK as grounds not to take action themselves.

Assessing costs and benefits of options

59. The following sections provide an assessment of the benefits and costs of ending the ivory trade in the UK.
60. Since the purpose of the intervention is moral and geopolitical, and so not primarily economic, proportionate analytical effort has been focused on estimation of the potential costs of the policy, in particular, the costs to business. In view of the nature of the policy objectives and data limitations, benefits are not monetised.

Benefits of ending the ivory trade in the UK

61. Earlier sections on the rationale for government intervention and on the intended effects of the policy clearly demonstrate the benefits of intervention. In view, however, of the nature of the policy objectives and intended effects, benefits are not monetised. We can identify a range of direct and indirect benefits from ending the UK trade in ivory, all of which ensure the ultimate purpose of protecting wild elephants.
62. Direct Benefits
 - Benefits to UK citizens whose welfare will be enhanced from the knowledge that the UK is playing its part to bring an end to the illegal trade in ivory that is threatening to bring extinction to African elephants.
 - A strong reputational benefit to the UK in showing international leadership, increasing the likelihood that other countries will act to undermine the incentives and opportunities for elephant poaching. The UK has had a leading role in preserving international biodiversity. Contributing to save wild elephants will have a beneficial effect on our international reputation.
 - It will be easier to enforce domestically, as enforcement officials will only need to determine whether an object contains ivory, rather than identifying dates and origins.
63. Indirect Benefits
 - Potential business benefits or new market opportunities for (i) safari businesses and eco-tourism businesses to capitalise on the momentum and increased citizen awareness arising from the ban, and (ii) suppliers of substitute products for ivory and those involved in re-purposing products with non-ivory parts.

- Preserving the biodiversity and elephant populations have a positive effect on the ecosystems and on other species of fauna and flora, as well as on tourism activity in those areas.³⁹
 - Any reduction in the illegal ivory trade will reduce pressure on the destabilising forces involved in poaching, which funds armed conflict, undermines economic stability and the tax-base, and reduces the effectiveness of UK foreign aid.⁴⁰
64. We would expect some significant indirect benefits to accrue both to affected businesses and to the wider sector as a result of substitutability/adaptability. I.e. businesses currently stocking products affected by the ban, may increase the stock of other items they currently sell or diversify into new product lines. Alternatively, consumer demand might dissipate amongst the wider sector, and other businesses may increase their profits.
65. Retail businesses are assumed to purchase stock for sale based on a return on investment decision. In response to the ban, we would therefore expect affected business to quickly switch to the next best alternative investment. Items containing ivory make up a relatively small proportion of the market, and survey evidence indicates that the majority of antique dealers and auction houses are not dependent on the sale of products containing ivory.⁴¹ This suggests it would be relatively easy for many businesses to switch to suitable alternatives. Similarly, auction houses have an ability to draw in items. In response to the ban we would expect them to focus their attention on drawing in alternative products.
66. Whilst we note that supply in the affected sectors is relatively inelastic. There are some routes through which businesses can increase supply. For example, over time an increasing number of items become of historical interest/desirability. The supply of antiques could also be increased from overseas, and we are aware that the large auction houses deal extensively in the international market.
67. Further to this, recent years have seen significant growth in the antiques sector. ONS Annual Business Survey (ABS) data shows that retail turnover has increased from £276m in 2008 to over £1bn in 2016.
68. The effect of the adaptability/substitution described above would be to mitigate some of the direct cost to business outlined in the subsequent section. The extent of this indirect effect is highly uncertain and we have therefore not been able to monetise the effect.

Costs of ending the ivory trade in the UK

69. The consultation sought additional evidence in a number of areas, in order to assist in estimating the costs of ending the ivory trade in the UK. Only a small amount of further substantive evidence was gathered.
70. It is clear that standard industry data is not granular enough to capture specialist items such as those containing ivory and understanding value is very challenging in view of the heterogeneous nature both of the industry itself and of ivory items. Further to this, there is no single regulatory trade body for the sector, and only a small percentage of

³⁹ Naidoo et al (2016) estimate in \$25 million annually the lost economic benefits that poached elephants would have delivered to African countries via tourism.

⁴⁰ Ivory and Insecurity: the Global Implications of Poaching in Africa. Hearing before the Committee on Foreign Relations. United States Senate. 24th May 2012.

⁴¹ Cox (2017), "*The Elephant in the Sale Room: An Inquiry into the UK Antiques Trade's Sale of Ivory*", School of Law, University of Portsmouth

UK dealers and auctioneers are members of any trade association. No comprehensive survey exists of the domestic ivory trade.

71. Recent studies by Traffic, the University of Portsmouth, and Two Million Tusks have attempted partially to address this, and provide some useful evidence. Some consultees also provided further evidence on the market share of ivory in affected sectors, drawing upon information from online auction and dealer sites. However, each of these sources have their limitations with regards to generalising to wider regions or sectors. Overall, our cost estimates are derived by triangulating multiple sources of varying robustness and specificity. The uncertainty implied by this is accounted for in the low-high ranges provided.
72. Some respondents to the consultation expressed concern that the proposed ban might lead the price of ivory to increase, and thereby act as an incentive for illegal ivory trade. Adequate enforcement of the ban is an important factor in ensuring this does not occur. We make the assumption that when ivory items within scope of the ban are no longer legally available for trade, law-abiding people will stop buying or will switch to alternative products. We anticipate that sellers considering taking the risk of selling on the illegal market will be put off by a lack of demand and the potential penalties. Evidence from China referenced in paragraph 40 suggests that prices have actually fallen in anticipation of a ban. We do not assume any price changes in the analysis set out below.

Costs to business

73. Ending the domestic trade in ivory will affect businesses engaged in the buying and selling of ivory or items containing ivory. Our best estimate is that the EANDCB of the policy is £7.4m, and the present value of net cost to business over the ten year appraisal period is £74.6m.
74. The ban is expected to result in direct costs to business in four ways:
 - a) Businesses selling worked ivory products will need to familiarise themselves with the new arrangements, and specifically the precise nature of the exemptions
 - b) For dealers that hold stock of items containing worked ivory. These businesses have incurred the cost of inventory in items that could no longer be sold and would no longer be of value. This would be a one-off cost, that businesses cannot recover
 - c) For dealers that could no longer deal in items containing worked ivory, there would be lost profit from those sales (not covered above). This would be an annual on-going cost.
 - d) For auction houses that sell items containing worked ivory on others' account, there would be lost profits that would have been earned from commission revenue and buyer's premium. This would be an annual on-going impact.
75. The costs to business of the preferred option set out in this IA are expressed relative to the counterfactual i.e. the 'do nothing' option. It is assumed that in the absence of the proposed intervention, that the current structure of the sector and extent of ivory sales would remain constant. This is a conservative assumption; despite increases in antiques sales more broadly, recent field research provides suggestive evidence of a decline in ivory sales. The 2016 study found that the number of individual market stalls offering

ivory for sale in London declined from ~640 stalls in 2004 to 200 in 2016.⁴² If this decline is representative of a nationwide trend, and is one that would have continued (in the absence of the ban), then we will be overestimating the costs to business.

Familiarisation

76. Familiarisation costs would be one-off, transitional costs, which we estimate will occur in the first year of the appraisal period.
77. Businesses across the relevant sectors will be affected by this measure in very different ways, meaning there will be large variations in the amount of time and resource organisations in each sector need to spend familiarising with them. However, developing bespoke estimates for each sector affected would be disproportionate.
78. The most relevant starting point for estimating the number of businesses affected in the antiques sector specifically, is the ABS. The latest available data shows that the UK retail antiques sector (including antique books but excluding stall sales) contained 1712 antique dealers.⁴³ A portion of retail trade from street stalls will also be accounted for by antiques, the latest data found there were 770 street stalls in the category – ‘retail sale via stalls and markets of other goods’.⁴⁴ This category will include a wide variety of sales, not all of which will be antiques. It can therefore be regarded as an upper estimate. Additionally, the auction sector (as distinct from antique dealers who buy and sell) is estimated to contain 1000 businesses.⁴⁵
79. Not all businesses that deal in antiques will sell ivory products. Data is limited in this regard, however two recent surveys provide some indication of how concentrated ivory products are in the market. The Traffic survey of antique stalls and shops in London found that only 15% offered ivory items for sale⁴⁶. It was noted that the majority of traders displayed only a few ivory items for sale, however there were a small number of ivory specialists, stocking between 100 and 500 distinct pieces. Similarly, Two Million Tusks’ study found that ivory did not represent a significant part of the business of any of the auction houses assessed. The highest percentage of any one individual auction house’s business comprising ivory lots was 13%, all concentrated in one particular sale. The next highest was 8%, again in one particular sale.⁴⁷
80. Although ivory items appear to be relatively concentrated within the affected sectors, we make the conservative assumption that all businesses within the sectors outlined above would incur a small time cost of familiarisation.

⁴² Traffic (2016) A Rapid Survey of UK Ivory Markets, p.14.

⁴³ Annual Business Survey (2016 provisional data), Class 47.79/1

⁴⁴ Annual Business Survey (2016 provisional data), Class 47.89. Note data outlined for this classification is from 2015 as this is the most recently available.

⁴⁵ The British Art Market in 2014, <http://tbamf.org.uk/wp-content/uploads/2014/08/British-Art-Market-2014.pdf>

⁴⁶ Traffic (2016) A Rapid Survey of UK Ivory Markets

⁴⁷ Two Million Tusks (2017) p.28

81. We gave consideration to the inclusion of commercial art galleries, however views and evidence from the consultation indicate that this sector will not be affected by an ivory ban. Exemptions for de minimis and portrait miniatures provide further justification for this.

82. It is assumed that the time required for familiarisation will be 30 mins per business. An estimate of hourly rate of pay is taken from the 'retail sale of second hand goods in stores' sub-category of the ONS Annual Survey of Hours and Earnings.⁴⁸ We assume that this cost is equivalent to a typical workers wage in the businesses affected. The hourly rate specified in the table below has been inflated by 30% in order to account for non-wage costs, in line with standard guidance.

	Total number of businesses affected (A)	Estimate of hourly rate of pay (B)	Estimate of time taken in hours (C)	Total cost (A x B x C)
Antique Dealers	1,712	£11.34	0.5	£9,704
Street Stalls	770	£11.34	0.5	£4,364
Auction Houses	1,000	£11.34	0.5	£5,668
Total	3,482			£19,736

83. Based on these assumptions we estimate that a total one-off familiarisation cost of £19,736 will be incurred in 2018 when the policy is introduced.

One-off cost to antique dealers and street stalls

84. Antique dealers tend to maintain a permanent stock of antiques which they refresh as and when the stock becomes depleted. This means that some objects they offer for sale may sell quickly and others may take many months, possibly years to find a buyer.⁴⁹

85. We derive the value of the stock of items containing worked ivory held by antique dealers and street stalls by drawing upon estimates of 1) the proportion of sector turnover accounted for by worked ivory products; and 2) the ABS measure of 'total stocks and work in progress – value at end of year' in the sector.

86. Sector turnover is drawn from the relevant sub-categories defined in the ABS. The proportion of sector turnover accounted for by worked ivory products is taken from two studies conducted by Two Million Tusks.⁵⁰ The first study, drawing upon data from the-saleroom.com, found that ivory lots formed 0.70 to 0.76% of all the lots available. The second study, a more in depth look at a single high-end auction house, found that ivory lots formed 1.49% of all lots.

87. Consultation responses indicated that the prices of ivory items varies enormously. However, there was no evidence to suggest that the price of ivory items is typically higher than the price of other items sold.⁵¹ We therefore assume that all items have the

⁴⁸ ONS Annual Survey of Hours and Earnings, accessed via <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/allemployeesashtable1>

⁴⁹ This point was noted in BADA's response to the consultation

⁵⁰ Two Million Tusks (2017) Ivory: The Grey Areas. A Study of UK auction house ivory sales – The missing evidence

⁵¹ Two Million Tusks (2017) p.31 actually concluded that the average price of ivory lots is lower than the average price of all lots

same value, i.e. if ivory lots make up 1.49% of all lots, ivory sales make up 1.49% of all sales.

88. In the absence of alternative or more specific evidence, we assume that these proportions are also relevant for antique dealers and street stalls, and we therefore use 0.70% as our low estimate, 1.5% as our high estimate, and 1% as our best estimate.
89. The estimate of the value of sales of products containing ivory is multiplied by inventory as a proportion of annual sales in order to derive the estimate of one-off impact.

	Total Retail Turnover (£m)	Sales of products containing ivory – Low estimate (£m)	Sales of products containing ivory – Best estimate (£m)	Sales of products containing ivory – High estimate (£m)	Total stocks and work in progress – value at end of year (£m)	Inventory as a proportion of annual sales	One-off cost to business – Low estimate (£m)	One-off cost to business – Best estimate (£m)	One-off cost to business – High estimate (£m)
Antique Dealers	1,035	7.25	10.35	15.53	230	22%	1.61	2.30	3.45
Street Stalls	143	1.00	1.43	2.15	20	14%	0.14	0.20	0.30
Total	1178	8.25	11.78	17.67	250		1.75	2.50	3.75

90. In our best estimate scenario, there is a one-off cost of £2.5m that is expected to occur in 2018 when the policy is introduced. If all businesses are affected evenly, this is an average one-off cost of £1,343 per antique dealer, and £260 per street stall. In reality, some businesses are likely to be unaffected whereas others may incur much higher inventory losses.
91. It is worth noting that some businesses may sell off inventory ahead of any regulatory changes, thus reducing losses and resulting in a related drop in price of items containing worked ivory. At the same time, demand may rise as potential buyers may want to buy ahead of any changes. Due to the level of uncertainty in estimating this behavioural response, it has not been possible to monetise this potential outcome.

Ongoing cost to antique dealers and street stalls

92. An estimate of the total amount of profit lost on an ongoing basis by antique dealers and street stalls is calculated by drawing upon ABS estimates of gross value added (GVA). GVA represents the turnover of UK businesses in the sectors defined, less the cost of goods and services consumed in the production process.⁵²
93. The same assumptions as above are used to derive the **low (0.7%), best (1.0%), and high (1.5%)** estimates for the amount of GVA attributable to the sales of products containing ivory.

	Gross Value Added (£m)	Annual cost - Low estimate (£m)	Annual cost - Best estimate (£m)	Annual cost - High estimate (£m)
Antique Dealers	275	1.93	2.75	4.13
Street Stalls	74	0.52	0.74	1.11
Total	349	2.44	3.49	5.24

⁵² Annual Business Survey, UK non-financial business economy: 2016 provisional results. Accessed via: <https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/bulletins/uknonfinancialbusinesseconomy/2016provisionalresults>

94. A consultation response from BADA provides some assurance that these figures are of an appropriate order of magnitude. BADA compiled information from oninegalleries.com, which contains objects listed by members of BADA and LAPADA. They estimate that the total value of ivory items over the calendar year was £5.9m. We can estimate the amount of profit that would have been derived from these sales by drawing upon the sector wide figures for GVA.⁵³ This provides us with an annual cost to business estimate of £1.56m. It is noted that this source is not completely comprehensive of the sector, and therefore lower than our best estimate above, but it does help to provide some context.

95. The table below presents the profiles of discounted (best estimates of) business net costs over the period 2018-2027. The appraisal period and level of discounting applied are both in line with standard HMT Green Book guidance.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	PV of net cost to business (£m)
Discounted business net cost (Low estimate)	5.24	5.06	4.89	4.72	4.56	4.41	4.26	4.11	3.98	3.84	45.06
Discounted business net cost (Best estimate)	3.49	3.37	3.26	3.15	3.04	2.94	2.84	2.74	2.65	2.56	30.04
Discounted business net cost (High estimate)	2.44	2.36	2.28	2.20	2.13	2.06	1.99	1.92	1.86	1.79	21.03

96. For most businesses affected, ivory forms only a small proportion of their total sales⁵⁴, we would therefore expect some degree of adaptability/substitutability over the appraisal period. This is considered to be an indirect benefit and is discussed in paragraphs 64-68.

Ongoing cost to auction houses

97. Auction houses generate profits on items sold through the levy of two charges. Vendor's commission, a commission charge paid by the owner of the item, calculated from the hammer price (final price) of the lot. And buyer's premium; this is a percentage of the hammer price paid by the buyer in addition to the hammer price. These charges can often be substantial.⁵⁵ The main impact on auction houses is therefore the ongoing reduction in profits generated, as a result of no longer being able to sell items containing worked ivory on others' account.

98. In order to generate an estimate of this profit loss, we first need to derive a figure for sector GVA. The ABS does not contain an appropriate sub-category for auction houses for our purposes. We therefore refer to an estimate of sector turnover from BAMF⁵⁶, which estimated that the auction sector had a turnover of £3.2bn in 2013. Putting this

⁵³ ABS data for the retail antiques sector shows that GVA was 26.6% of Retail Turnover in 2016

⁵⁴ Cox (2017), "The Elephant in the Sale Room: An Inquiry into the UK Antiques Trade's Sale of Ivory", p53, School of Law, University of Portsmouth

⁵⁵ Sotheby's buyer's premium rate payable on hammer prices up to and including £180,000 is currently 25%. Source: <http://www.sothebys.com/content/dam/sothebys/PDFs/buyerspremium/November-1-2017-BP.pdf>

⁵⁶ The British Art Market in 2014, <http://tbamf.org.uk/wp-content/uploads/2014/08/British-Art-Market-2014.pdf>

into 2017 figures, we estimate a sector turnover of £3.34bn.⁵⁷ GVA is estimated by assuming that GVA as a proportion of turnover is the same as in the retail antiques sector (26.6%).

99. The next step is to estimate the proportion of sector profit that is generated from sales of ivory products. A BAMF report published in 2014 stated that Christie's and Sotheby's accounted for 53% of auction sector turnover⁵⁸. Assuming their market share has remained constant, this equates to a total value of sales of £1.77bn. Further to this, BAMF's response to the consultation stated that the total value of sales of objects made entirely from or containing ivory in 2017 at these two auction houses was £6.5m. Taking this figure as a proportion of their estimated turnover figure for 2017, suggests that products containing ivory make up less than 0.4% of their total sales.

100. It is plausible that ivory products could account for greater than 0.4% of sales in the remaining 47% of the sector. However, we have received no evidence to suggest that this figure is substantially higher.

101. We therefore take 0.4% as our low estimate for the sector as a whole, 0.7%, as found in Two Million Tusks study 1 (outlined in paragraph 86) will be our high estimate, and the mid-point 0.55% will be our best estimate.

	Gross Value Added (£m)	Annual cost - Low estimate (£m)	Annual cost - Best estimate (£m)	Annual cost - High estimate (£m)
Auction Houses	887	3.55	4.88	6.21

102. A consultation response submitted on behalf of a number of NGOs estimated a likely range for the value of ivory lots sold through auction houses in the UK annually. This estimate drew upon data from the-saleroom.com referenced in the Two Million Tusks study.⁵⁹ Extrapolating from this they estimate that the sales of ivory lots through UK auction houses could be c. 55,695 per annum. This figure was multiplied by two varying estimates of average price in order to derive a range of £14.7m to £45.8m. This needs to be adjusted in order to derive the impact on profits. Using the same GVA assumption as above, this suggests an annual cost to business of £3.9m to £12.2m. This estimate provides some assurance that our core estimate, derived in the table above, is of an appropriate order of magnitude.

103. The table below presents the profiles of discounted (best estimates of) business net costs over the period 2018-2027.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	PV of net cost to business (£m)
Discounted business net cost	3.55	3.43	3.31	3.20	3.09	2.99	2.89	2.79	2.70	2.60	30.55

⁵⁷ Derived using GDP deflator figures, accessed via https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/671592/GDP_Deflators_Qtrly_National_Accounts_December_2017_update.csv/preview

⁵⁸ The British Art Market in 2014, <http://tbamf.org.uk/wp-content/uploads/2014/08/British-Art-Market-2014.pdf> p. 19

⁵⁹ Two Million Tusks (2017) Ivory: The Grey Areas. A Study of UK auction house ivory sales – The missing evidence

(Low estimate)											
Discounted business net cost (Best estimate)	4.88	4.72	4.56	4.40	4.25	4.11	3.97	3.84	3.71	3.58	42.01
Discounted business net cost (High estimate)	6.21	6.00	5.80	5.60	5.41	5.23	5.05	4.88	4.72	4.56	53.47

104. Similar to antique dealers/street stalls, for most auction houses affected, ivory forms only a small proportion of their total sales, we would therefore expect some degree of adaptability/substitutability over the appraisal period. This is considered to be an indirect benefit and is discussed in paragraphs 60-64.

Overall

105. The table below summarises our overall estimates of one-off and ongoing costs over the appraisal period. This is based on our best estimates of ivory sales as a proportion of total sales, and an assumption that businesses are able to adapt over a 5 year period to mitigate some losses.

	PV of net cost to business (£m)
1. Familiarisation	0.02
2. One-off cost to antique dealers	2.5
3. Ongoing cost to antique dealers	30.04
4. Ongoing cost to auction houses	42.01
Total	74.57

106. The EANDCB of the policy is £7.4m. As can be seen, the majority of the cost to business is accrued on an ongoing basis, as a result of the loss of profit on items no longer able to be sold.

107. It is clear that there is a significant level of uncertainty within these estimates. The table below presents low and high estimates based on the assumptions outlined for ivory sales as a proportion of total sales.

	Low estimate	Best estimate	High estimate
PV of net cost to business (£m)	53.3	74.6	102.3
EANDCB (£m)	5.3	7.4	10.2

Exemptions

108. The exemptions (described in full in paragraph 44) will mitigate some of the costs of the preferred option by maintaining the market value of those items currently held by businesses and individuals, and allowing the continued trade in exempted items.

109. Due to data limitations, it has not been possible to 'net off' the full mitigated cost of the exemptions quantitatively. However, some indication of the extent of savings to businesses and individuals is discussed below, largely drawing upon BADA analysis detailed in their consultation response.

110. Items containing less than 10% ivory by volume will be exempt from the ban under the de minimis exemption. For musical instruments, the volume limit is higher (20%). We

do not have robust information on the number of items that would be exempt on this basis. However, BADA analysis provides some sense of scale. BADA's response distinguished between items predominantly made of ivory, and those where ivory is not predominant. They estimate that the latter makes up around 30% of lots containing ivory on auction website thesaleroom.com, and 32% of items listed on onlinegalleries.com. Of this subset, a small proportion are likely to be exempt.

111. The portrait miniatures exemption constitutes a distinct category of product. We can therefore be more precise in our estimate of the cost mitigating impact. BADA analysis found that portrait miniatures made up around 18% of lots containing ivory on the thesaleroom.com, and 37% of listings on onlinegalleries.com. Extrapolating from the midpoint of estimates of prices, we estimate that the combined total annual value of listings of portrait miniatures on these two websites is £398k. Additional sales of portrait miniatures are also likely to be conducted via other sources.
112. Feedback from the consultation suggests that at the higher end of the market the value of the object is not derived from its ivory content per se, but may be due to its historic, cultural, or artistic significance. Further to this, consultation responses from auction houses, including Christie's and Sotheby's, highlighted items containing ivory that have sold for significant sums. Based on this, we would expect that items exempted under the rarest and most important items of their type exemption, to typically be of higher value than the average item containing ivory. Given that eligibility for this exemption will be based on an assessment by a pool of specialists, it is not possible to give a specific estimate the volume or value of items likely to be exempted. However, we envisage that the number of items meeting this criteria will be very limited.
113. The museums exemption will enable the continuation of sales of ivory items both to and between museums. The exemption recognises that there may be some items owned by businesses or private individuals that are of such importance they may be valuable to museums. We would not expect a large volume of items to be sold by businesses to museums, so this exemption is unlikely to reduce the cost to business significantly. However, there may be occasional sales, and these items are likely to be of higher value than the average item containing ivory.

Costs of enforcing compliance

114. Under the 'do nothing' option the police, including the National Wildlife Crime Unit, are responsible for enforcing CITES controls on the sale of ivory in the UK. In this, they work with the Animal and Plant Health Agency's CITES compliance team. Border Force is responsible for enforcing rules on the import and re-export of ivory at the border.
115. Under our preferred option, putative sellers will need to register online the details of the item they intend to sell. We intend that the transaction (or intended transaction) is registered, and therefore if an item is sold by person A to person B this will be registered by person A, and if person B goes on to sell the item to person C they (person B) will need to register the transaction again.
116. The seller will be required to submit evidence to the database about the item and transaction, and to accept liability that the item they wish to sell is exempt from the general prohibition (or in the case of museums the transaction is exempt). The person will need to submit sufficient evidence that demonstrates to an enforcement agent on sight that their item does qualify for an exemption. This could be through the seller deciding to get advice from someone they think is an expert, or in the case of museums a letter confirming which museum is going to buy the item.

117. Government will incur costs in the set up and administration of the system in the following ways:
- A new IT system including a payments facility, publicly accessible database, case management function, and a new IT team to build the system;
 - A small amount of admin support from APHA to support sellers register items if they are not able to complete the online form;
 - Staff resource to carry out regular spot checks of items to test for compliance. The enforcement agents would be able to follow up with the seller if they found anything they felt did not meet the exemption claimed.
118. However these costs will be passed on to putative sellers, who will need to pay a fee to register an item that will recover the costs associated with the build and maintenance of the system, and ongoing compliance costs.
119. The direct costs imposed by this cost recovery mechanism have not been quantified due to the level of uncertainty in the number of items that will be processed, and the amount that will be charged. However, overall we judge that the combined effect of the exemptions and the accompanying compliance regime will not increase the direct cost to business. This is based on the following reasoning;
- The exemptions discussed in paragraphs 110 to 113 will constitute a reduction in the direct cost to business. This reduction has not been quantified and 'netted off';
 - The compliance system described only applies to items that fall within the exemptions outlined;
 - Logically, an individual would not pay the registration fee unless they deemed that the value of the potential sale was at the very least equal to the registration fee
120. Upon registering an item the seller will be provided with an auto-generated confirmation that their item has been registered, which the buyer can ask to see before they complete the transaction. Defra or an associated body will not approve the registration however compliance and enforcement agents will have access to the back-end database as a way to monitor sales and identify compliance concerns.
121. We intend that for the de minimis, museums, portrait miniatures, and musical instrument exemptions, only this process will apply. For the rarest and most important items of their type exemption the seller will need to first obtain a certificate. The cost of applying for a HAC exemption would be higher than applying for other categories to reflect a) the (very) limited number, and importance, of the items we envisage being submitted, and b) the requirement to involve experts in their fields. A higher cost would also have a "filtering effect" on the number and types of items submitted. We would envisage charging a cost recovery element to cover the APHA's processes, and a higher, flat rate fee to cover the experts' involvement.
122. Defra intends to publish details of the sales/intended sales that have been registered to take place every 2 years. This will increase transparency around the remaining trade in ivory items.

Non-business impacts – costs to individuals

123. There will also be a cost to private individuals and households which have their own items made of or containing ivory. According to BADA (cited in the University of Portsmouth study), there are over two million items made of ivory or with an ivory component (such as piano keys, furniture fittings, carvings, boxes and knife handles) in British homes. It is not clear how this figure was derived, and as far as we are aware, there are no alternative estimates available.
124. Ivory objects are frequently and widely valued for probate or insurance purposes. The value to their owners will largely be for their own use, pleasure or sentiment, but they are also assets with a resale or inheritance value. Whilst the ban would not affect the right to inherit, gift and bequeath, ending the domestic trade in ivory containing products would eliminate the legal financial value of such assets and represent an overall loss of wealth to British households. Some of this might be mitigated where items could be repurposed to remove the ivory in order to retain some legal financial value. Estimating such losses would be very hazardous in view of major uncertainties relating to the resale value of such items, the potential for re-purposing, date of potential future resale and the alternative value to owners of retaining the items. Further to this, as noted in paragraph 75, it may well be the case that the trade would continue to decline of its own accord, at least at a domestic level, so the value of privately held items may well have fallen in the absence of the policy.
125. As with the costs to business, it is likely to be the case that some of these potential losses do not materialise, insofar as those households owned ivory items that fall within exemption categories.

Small and Micro Business Assessment (SaMBA)

126. A small business is defined in the Better Regulation framework manual as one employing fewer than 50 full-time equivalent employees, and a micro-business as one employing up to 10 employees.

How much of the overall cost to business is expected to fall on small businesses?

127. In view of the structure of the antiques and auction industry, we would expect the majority of businesses affected to be small and micro businesses.
128. Auction businesses are slightly larger on average than antique businesses⁶⁰, therefore in the retail antiques and street stalls sectors a greater proportion of the costs will fall on small and micro businesses.
129. Survey evidence indicates that the vast majority of antique dealers (92%) are micro-businesses, and none employ more than 50 full time employees.⁶¹ Assuming that this survey is representative of the wider sector, we would therefore expect 100% of the cost to the antique sector, to fall on small businesses. We have no specific information on

⁶⁰ Cox (2017), "The Elephant in the Sale Room: An Inquiry into the UK Antiques Trade's Sale of Ivory", p30, School of Law, University of Portsmouth

⁶¹ British Antique Dealers' Association, Annual Survey of members 2012
http://www.bada.org/public/BADA_Annual_Survey_2012.pdf

street stalls, but given the nature of the industry, we would also expect 100% of the cost to fall on small businesses.

130. As previously stated, in the auction sector the two largest multinational auction houses hold a market share of 53%⁶². On the assumption that their overall market share, is equivalent to their market share in ivory sales, no more than 47% of the cost will fall on the remainder of the sector.
131. We would not consider the burden on small business outlined above as disproportionate inasmuch as the costs in terms of lost stock value and lost trading margins is expected to be proportional to the size of the business i.e. the costs are variable not fixed. So for example, if ivory typically accounts for 1% of antique sales, that percentage will imply a larger absolute loss for a larger firm than for a smaller firm.
132. Under our preferred option the principle of targeted exemptions, to the extent that these are not based on criteria related to business size, should not disproportionately disadvantage smaller firms.

How much of the policy objective would be sacrificed by applying a full exemption to small businesses?

133. It is clear that a full exemption to small businesses from a ban on ivory sales, given their level of presence in the trade, is not compatible with achieving a large part of the intended benefits of the measure.
134. A full exemption would mean the policy objective to close domestic markets in antique ivory and ivory products would not be achievable. A full exemption would imply only a marginal reduction in ivory trade sales, and mean that the UK would not secure the diplomatic leverage intended to persuade other countries to close their domestic markets.
135. There may also be unintended consequences. Trade in ivory products currently through larger businesses could be displaced and diverted through smaller businesses. Large businesses would also have an incentive to create new smaller specialist trading arms in order to trade ivory products.
136. In principle, a full exemption for small businesses would significantly reduce the benefits in quantitative terms of the policy.

Assumptions and limitations of the analysis

137. Assessing the costs and benefits of a total ban on ivory sales is subject to a range of limitations and assumptions.
138. On the benefits side, the key assumptions are that (i) other countries will be positively influenced by the UK lead and implement their own bans, and (ii) there will be, exemptions aside, the closure of the UK domestic market which will result in a reduction in overall global demand of ivory. Reduced demand puts downward pressure on prices and reduces the incentive to poach and kill elephants.

⁶² The British Art Market in 2014, <http://tbamf.org.uk/wp-content/uploads/2014/08/British-Art-Market-2014.pdf>

139. On the costs side, there are uncertainties regarding the impact of the proposed ban on affected sectors, given the data limitations. These uncertainties are discussed in paragraphs 70-72.

Wider Impacts

140. We have considered the possible wider impacts of this proposal and have discussed the relevant ones in the cost and benefits section above.

Conclusion

141. This Impact Assessment has set out the political and economic case for banning the sale of ivory in the UK. It has identified the nature of the benefits and costs and the sectors and groups affected, and the challenges and uncertainties in estimating impact.

