

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventy-eighth meeting of the Standing Committee
Geneva (Switzerland), 3-8 February 2025

Species conservation and trade

Fauna

Elephants (Elephantidae spp.)

TRADE IN MAMMOTH IVORY

1. This document has been prepared by the Secretariat.
2. At its 19th meeting (CoP19, Panama City, 2022), the Conference of the Parties adopted Decisions 19.102 and 19.103 on *Trade in mammoth ivory*, as follows:

Directed to the Secretariat

19.102 *The Secretariat shall, using available information and research studies, compile information relating to the potential contribution of mammoth ivory trade to illegal trade in elephant ivory and elephant poaching and report its findings to the Standing Committee.*

Directed to the Standing Committee

19.103 *The Standing Committee shall consider the report and findings provided by the Secretariat in accordance with Decision 19.102 and make recommendations to the 20th meeting of the Conference of the Parties.*

Background

3. At its 18th meeting (CoP18, Geneva, 2019), the Conference of the Parties considered [proposal CoP18 Prop. 13](#) to list the Woolly mammoth (*Mammuthus primigenius*) in CITES Appendix II, in accordance with Article II, paragraph 2 (b) of the Convention (the so-called "look-alike provision"). The proponent argued that Annex 3 to [Resolution Conf. 9.24 \(Rev. CoP17\) on Criteria for amendment of Appendices I and II](#) supports the inclusion of the extinct woolly mammoth in the Appendices if they meet one of the precautionary criteria included in paragraph D of Annex 4 to Resolution Conf. 9.24 (Rev. CoP17).
4. Proposal CoP18 Prop. 13 explained that the primary purpose of the proposed amendment was to prevent "laundering" or mislabelling elephant ivory as mammoth ivory due to similarities between these ivories. The main rationale for the proposed listing was thus the potential impact of trade in mammoth ivory on living elephants.
5. Discussions pertaining to proposal CoP18 Prop. 13 reflected that Parties considered that listing an extinct species in Appendix II fell outside of the scope of the Convention; that elephant and mammoth ivory were easily differentiated; and that there was insufficient evidence about the extent of laundering elephant ivory as mammoth ivory. Some Parties also noted that the proposed listing would create additional administrative, financial and enforcement burdens for Parties.

6. At CoP18, the Secretariat clarified that Annex 3 and Annex 4, paragraph D, to Resolution Conf. 9.24 (Rev. CoP17) concern the deletion of species from Appendices I and II, not their inclusion. Based on these observations, the Secretariat stated that Annex 3 and Annex 4.D to Resolution Conf. 9.24 (Rev. CoP17) were not applicable for including an extinct species in Appendix II ([see document CoP18 Doc. 105.1 Annex 2](#)).
7. At CoP18, Israel as proponent agreed to withdraw proposal CoP18 Prop. 13, subject to the adoption of two draft decisions. The Conference of the Parties adopted Decisions 18.120 and 18.121 on *Trade in mammoth ivory*, which *inter alia* directed the Secretariat, subject to external funding, to commission a study on the trade of mammoth ivory, and its impact on the illegal trade in elephant ivory and the poaching of elephants. Since no external funding was secured to undertake the study called for in the CoP18 Decisions, the Conference of the Parties adopted Decisions 19.102 and 19.103 as outlined in paragraph 2 above.

Implementation of Decision 19.102

8. As requested by Decision 19.102, the Secretariat compiled information regarding the trade in mammoth ivory and its potential impact and contribution to the illegal trade in elephant ivory and poaching. A comprehensive list of references can be found in the Annex to the present document.
9. The Secretariat issued [Notification to Parties No. 2023/136](#) of 27 November 2023 inviting Parties and stakeholders that conducted research or studies on this subject to submit information to the Secretariat. The Secretariat received responses from Mainland China, Hong Kong Special Administrative Region (SAR) of China, and Canada, as well as from the University of Kent, IWMC World Conservation Trust and Robin des Bois. These responses are made available in the languages they were received as an information document for the present meeting.
10. In compiling relevant information, the Secretariat took into consideration matters related to the laundering of elephant ivory as mammoth ivory, the influence of mammoth ivory prices on illegal markets for elephant ivory, and the potential consequences of mammoth ivory trade on elephant poaching. While reviewing research outcomes, the Secretariat particularly focused on understanding the correlation between the mammoth ivory trade and its potential impact on illegal trade in elephant ivory and elephant poaching. The Secretariat incorporated the information compiled and the responses to Notification to Parties No. 2023/136 in its analysis in the following paragraphs..

Report on available knowledge and information on the potential contribution of mammoth ivory trade to illegal trade in elephant ivory and elephant poaching

11. Mammoth ivory is primarily sourced from the woolly mammoth (*M. primigenius*), one of the six species within the extinct *Mammuthus* genus, which vanished around 4,000 years ago. The majority of woolly mammoth carcasses are found in Siberia, Russian Federation, with approximately 80% of fossilized mammoth ivory in the Russian Federation originating from Yakutia (the Sakha Republic).
12. Woolly mammoth ivory is primarily extracted from mammoth carcasses discovered beneath the permafrost of North-eastern Siberia in the Russian Federation. The effects of global warming, leading to the melting of the surface ice, result in the exposure of these buried mammoths by mammoth miners. An estimated 5 million mammoth carcasses lie beneath the permafrost in Siberia alone, with approximately 5,000 carcasses having been extracted thus far (Oard, 2000; Nash, 2022). Additionally, studies suggest that the Yakutia region alone holds more than 500 thousand tons of mammoth ivory, valued at about USD 100 million.
13. Available information indicates that the Russian Federation is the primary exporter of mammoth ivory, whilst the most significant markets for mammoth tusks are in Mainland China and the Hong Kong SAR of China, with Hong Kong SAR of China functioning as the primary entry point for mammoth ivory into Mainland China. According to empirical studies conducted in 2010, three main countries from which Hong Kong SAR of China imported mammoth ivory were the Russian Federation (83%), the United States of America (8.5%), and Germany (7.5%) (Martin and Martin, 2011; Nash, 2000). The chart below shows the correlation between the amount of mammoth ivory exported from the Russian Federation and the amount of mammoth ivory imported by Mainland China and Hong Kong SAR of China, by metric tonnes.

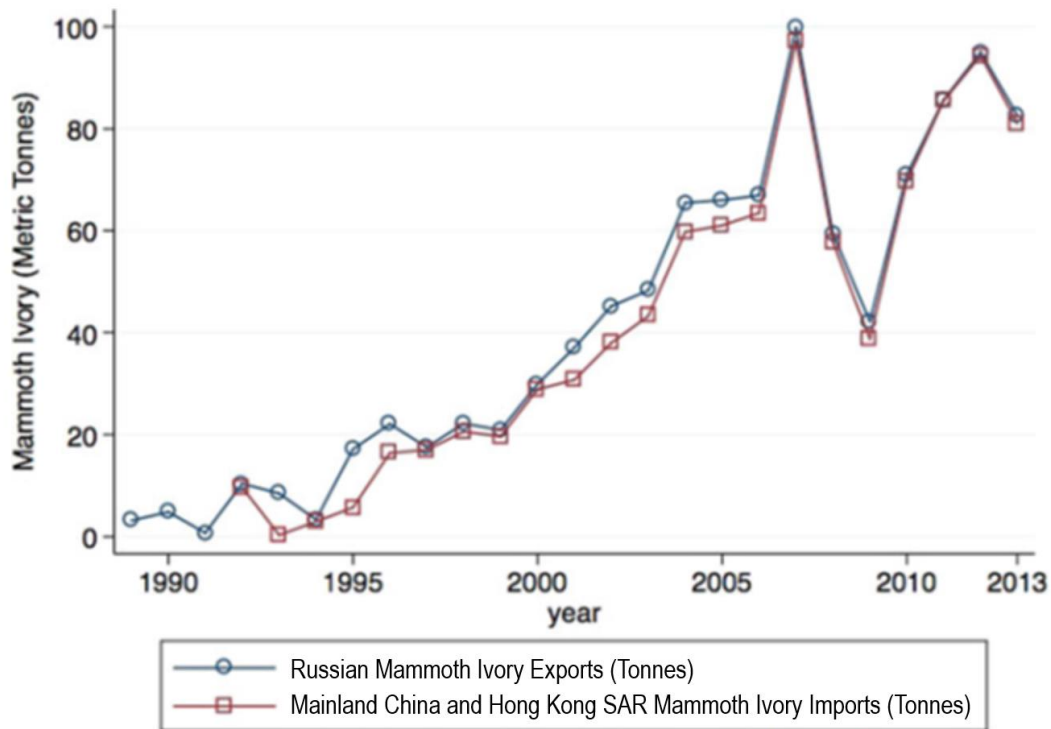


Figure 1: Correlation: mammoth ivory exported and imported: Russian Federation and China (figure from Farah and Boyce 2019, 231. The legend has been adapted for terminology purposes.)

14. Available information indicates that Mainland China and Hong Kong SAR of China have the largest markets for mammoth ivory and that demand for mammoth ivory remained consistently high in China for decades. Studies indicate that, as early as 2001, the market for mammoth ivory in Hong Kong SAR of China was notable, with 12,207 mammoth ivory items available across 29 outlets. However, this figure was still lower than the 35,884 elephant ivory items for sale from 85 outlets in Hong Kong SAR of China during the same year. Available information suggests that the elevated demand for mammoth ivory can be attributed to the cultural significance of traditional ivory carving in China, where ivory carving skills hold the status of an intangible national heritage (Stoner, 2021). Smaller markets for mammoth ivory are also reported in France, Germany, Thailand, the United States of America and Viet Nam (Nas, 2000; Martin and Stiles, 2003).
15. In 2017, Mainland China implemented a policy banning domestic trade in elephant ivory and products derived from it. This prohibition had a profound impact on the operations of ivory carving facilities, prompting a significant transformation. The ban led to the adoption of alternative materials substituting elephant ivory. Before the ban, carving workshops in Beijing, Guangzhou, and Fujian were primarily dedicated to working with elephant ivory (Gao and Clark, 2014). After the ban was introduced, these workshops transitioned to using mammoth ivory instead (Nash, 2021).
16. Available information suggests that the interest in manufacturing and owning elephant ivory is being replaced with mammoth ivory due to its similarity with elephant ivory, and the advantage of legality for trade in mammoth ivory (Farah and Boyce, 2015; Martin and Martin, 2010; Nash, 2022).
17. Grade "A" mammoth ivory, commonly known as "ice" is considered the most suitable substitute for elephant ivory. This is because of its similar appearance and texture to elephant ivory. Given the cultural and traditional significance of ivory carving in China, substituting elephant ivory with mammoth ivory holds the potential to positively impact the reduction of demand for illegal trade in elephant ivory. However, while the transition from elephant ivory to mammoth ivory could be viewed positively in terms of redirecting demand to an extinct species, there are challenges associated with such a shift.
18. Some sources consulted highlighted that the positive outcomes resulting from the shift to the use of mammoth ivory, aiming to reduce demand for elephant ivory and ease pressure on elephant populations, may be transient. It was noted that, while the trade in mammoth ivory could initially act as a substitute for elephant ivory demand, it also carries the risk of sustaining or increasing the demand for ivory, noting that mammoth ivory is not a renewable resource. Once the sources of mammoth ivory are depleted or its supply

is affected by unforeseen circumstances, demand may likely revert to other types of ivory, including elephant ivory.

19. The similarity of mammoth ivory to elephant ivory also raises concerns regarding mislabelling elephant ivory as mammoth ivory. This practice aims to mislead enforcement officers and circumvent CITES requirements. It is this similarity that underpinned proposal CoP18 Prop. 13 to include *Mammuthus primigenius* in Appendix II. In this context, one study shows that 61% of 6,437 ivory items in Guangzhou, China in 2011 were either not sold with the required identification cards, or the buyers did not retain the identification cards, providing an opportunity for mixing and selling mammoth and elephant ivory items together (Nash, 2022).¹ A similar incident occurred in the United States of America, where a store in New York was found to be in possession of 126 elephant ivory items valued at 4.5 million USD, mislabelled as mammoth ivory (*Ibid.*).
20. Mammoth ivory is typically distinguished from elephant ivory through the "Schreger lines." These lines represent unique patterns visible in the cross sections of ivory, with mammoth ivory exhibiting an angle less than 90°, while elephant ivory shows an angle greater than 115° (CITES Identification Guide for Ivory and Ivory Substitutes 12-27).
21. When ivory is shaped into curved or dyed products, accurately distinguishing whether it originates from mammoth or elephant becomes challenging (Ngatia, Lan et al., 2019). This situation could potentially create opportunities for the laundering of elephant ivory, thereby contributing to illegal trade and elephant poaching.
22. As highlighted in proposal CoP.18 Prop.13, elephant ivory in trade is occasionally painted or intentionally discoloured to create an appearance of aging or similarity to mammoth ivory. In these cases, the only accurate method for distinguishing extant elephant ivory from mammoth ivory is through DNA testing, which may be costly and not readily accessible to enforcement officers. According to a study by TRAFFIC, prior to the domestic trade ban, small accessory items and ornaments posing a challenge for differentiation due to the distortion of Schreger lines in smaller items, constituted 94% of the total ivory items in physical markets in China (Yu Xiao, 2018).
23. Trade in mammoth ivory is generally legal and legislation and policies prohibiting trade in mammoth ivory are not widespread among CITES Parties. India and Israel are the only Parties where trading in mammoth ivory is illegal throughout their territories. In the United States of America, laws banning the trade in mammoth ivory were enacted in some States. However, at the federal level, there is no overarching legislation prohibiting trade in mammoth ivory. In Canada, legislation at the provincial level restricts and regulates both the extraction of mammoths and the trade in their ivory.
24. The exact volume of elephant ivory laundered as mammoth ivory remains uncertain. Empirical studies conducted in China indicate cases where specific outlets knowingly mislabelled elephant ivory as mammoth ivory (Yu Xiao, 2018). Although the scope of these studies has been limited, the evidence suggests that the mislabelling of elephant ivory as mammoth ivory was confined to a small number of market outlets. Moreover, in response to Notification to Parties No.2023/136, Robin des Bois shared the results of a survey on the French market for raw and worked mammoth ivory, which indicates that there have been no recorded seizures of worked elephant ivory fraudulently labelled as mammoth ivory in France. According to Robin des Bois, the risk of fraud appears to be even less significant for trade in raw mammoth ivory.
25. In response to Notification to Parties No. 2023/136, China, including Hong Kong SAR of China, states that laundering of elephant ivory as mammoth ivory is insignificant and rarely found. The Party highlights that shop inspections and market surveys confirm this. Hong Kong SAR of China stated that, in the reporting period of 2022-2023, only one seizure involved suspected elephant ivory specimens labelled as mammoth ivory and that this case is still under investigation. It is further reported that for other cases detected, investigated and finalized during the same period, the quantities of elephant ivory specimens found were of small volume, and none of these cases involved the declaration of mammoth ivory as a disguise. Further, in its reply to the Notification, China argues that the mammoth ivory trade makes no contribution to illegal killing of elephant populations. The response from Canada also states that there is no evidence suggesting that trade in woolly mammoth ivory impacts the conservation of elephants in range States.

¹ This matter predated the 2017 policy banning domestic elephant ivory trade in China, as mentioned in paragraph 17 of the present document.

26. A study indicates that the legal risks associated with the trade in elephant ivory make it an unpopular choice and suggests that most retailers active on e-commerce websites trade only genuine mammoth ivory labelled as such (Stoner, 2021).
27. Another study on the trade in mammoth ivory and its impact on illegal trade in elephant ivory and elephant poaching suggests that mammoth ivory, as a legal substitute for elephant ivory, has ultimately reduced trade in elephant ivory. The study indicates that, without the 80 tons of Russian mammoth ivory exports per annum from 2010 to 2012, elephant ivory prices could have doubled, and poaching levels increased (Farah and Boyce, 2019).
28. Moreover, available information suggests that mammoth ivory exports from the Russian Federation over the years led to a reduction in African elephant ivory seizures. It is estimated that one ton of Russian mammoth ivory exports causes a decrease in elephant ivory seizures by between 0.4 and 1.1 tons. Additionally, research on the ivory market indicates that, for each ton of Russian mammoth ivory exports, the price of elephant ivory decreases by about \$1.50 per kilogram. (Farah and Boyce, 2019).
29. The Secretariat notes that document [CoP18 Doc. 69.2](#) on the *Report on Monitoring the Illegal Killing of Elephants (MIKE)* considers mammoth ivory as a covariate in elephant ivory supply and demand variables. The MIKE report indicates that mammoth ivory prices are correlated with black-market elephant ivory prices. The report shows that the price of mammoth ivory increased in response to unmet demands for elephant ivory.
30. The price of raw elephant ivory, in the absence of mammoth ivory supply, could have been double their current rates, providing more incentives for poachers to illegally harvest and trade in elephant ivory (Farah and Boyce, 2019). Since 2000, the price of raw elephant ivory has decreased, while the price of raw mammoth ivory increased significantly from 2010 to 2013, which could be indicative of greater demand for mammoth ivory. The table below shows the influence of mammoth ivory prices on the price of elephant ivory.

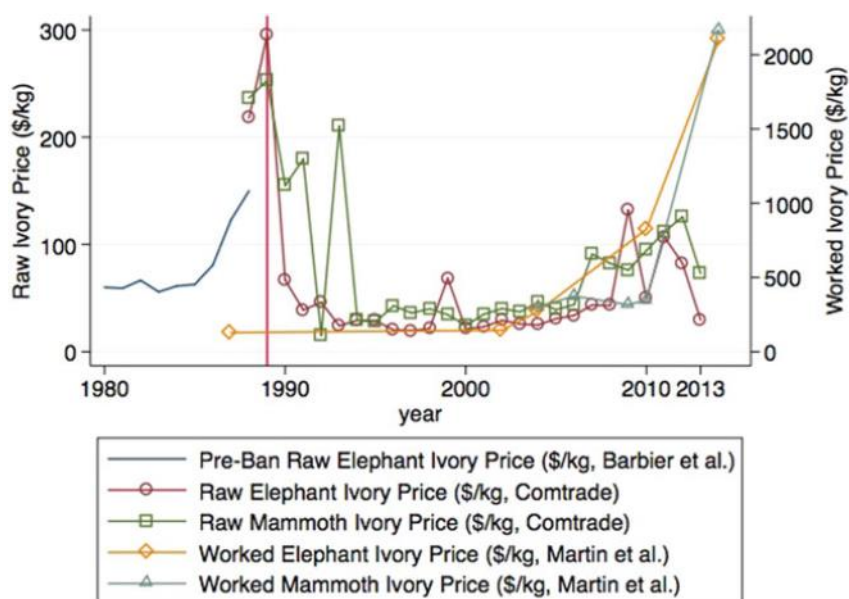


Figure 2: Elephant and mammoth ivory prices (figure from Farah and Boyce, 2019, 231)

31. The mammoth ivory price is also correlated with the volume of exports from the Russian Federation to China as the main mammoth ivory market. The significant increase in the export and import of mammoth ivory, coupled with the availability of mammoth ivory as a substitute for elephant ivory appears to be factors in reducing the demand and price for elephant ivory.
32. Proposal CoP18 Prop. 13 states that mammoth ivory is not a sustainable substitute for elephant ivory, because mammoth ivory is not a renewable source and the process of extracting mammoth ivory from under permafrost involves environmentally degrading methods. It further states that these methods contribute to global warming and result in the loss of scientific and cultural value that the woolly mammoth could potentially offer to both the local and international community.

33. Available information indicates that the process of extracting mammoth ivory from permafrost is environmentally harmful. The use of high-pressure pumps to melt the permafrost where mammoths are buried results in the release of a significant amount of Carbon dioxide and methane, which have been trapped inside the layers of permafrost, into the atmosphere. Additionally, when mammoth miners discover mammoths, they extract the tusks and leave the rest of the carcass on the spot, leading to the release of further greenhouse gases through the decomposition of mammoth remains at extraction sites. Consequently, the process of harvesting mammoth ivory could contribute to global warming and environmental pollution in the areas where the mammoths are found.
34. The extraction and trade of mammoth ivory are not "unregulated". The Russian Federation, as the primary exporter of mammoth ivory, has laws and regulations governing the extraction and trade of mammoth ivory. Tusk miners are required to obtain commercial transport licenses and clearances from the Ministry of Internal Affairs to operate in protected areas of Siberia. Companies involved in the mammoth ivory trade also need export and import permits to move materials across borders. Additionally, mammoth tusks must undergo an expert examination to determine their cultural and scientific value, ensuring that the process can detect whether ivory items are mammoth or elephant ivory (IWMC World Conservation Trust response to Notification to the Parties No. 2023/136; Arctic Antiques, [Arctic exports 2023](#)). Even though the trade in mammoth ivory itself is not illegal, information suggests that the process of extracting mammoths is often conducted illegally, without securing permits or adhering to regulations. According to the law of the Russian Federation, only mammoth tusks that have naturally surfaced, typically due to permafrost melting, can be harvested. However, available information suggest that many miners expedite this process by using high-pressure hoses to blast the permafrost. This accelerates the destruction and loss of permafrost and results in pollution of local river systems (Cox and Hauser, 2019).
35. In response to Notification to Parties No. 2023/136, Canada, as a former range State for the woolly mammoth, reported that woolly mammoth fossils are regulated from the perspective of cultural and scientific significance. At the provincial level, the Yukon Historic Resources Act requires mining companies to report any discoveries of mammoth remains. If the fossils lack scientific or historical significance, they are permitted to enter the commercial market. Furthermore, Canada regulates the export of woolly mammoth ivory at the federal level through the Cultural Property and Import Act. According to this Act, residents of Canada are obligated to obtain a permit for trading specimens valued at more than 500 CAD or specimens weighing 11.25 kg (25 pounds) or more, irrespective of their value.

Conclusions

36. The review of available information and studies show that divergent perspectives exist on the trade in mammoth ivory. According to some studies, promoting the mammoth ivory trade is deemed beneficial as it has the potential to curtail illegal elephant ivory trade and mitigate elephant poaching. Conversely, other studies propose that, while the mammoth ivory trade could offer a temporary reduction in illegal elephant ivory trade and ease the pressure on existing elephant populations, such effects may be short-lived and might lead to a resurgence in demand for elephant ivory if the supply of mammoth ivory decreases (Aryal et al., 2018).
37. Regarding the concerns articulated in proposal CoP18 Prop.13 about the potential use of mammoth ivory as a commodity for laundering elephant ivory, instances have been reported where elephant ivory was mislabeled as mammoth ivory. Nevertheless, available information and studies suggest that the extent of this practice is limited and mislabeling of elephant ivory as mammoth ivory is not widespread. It is mostly limited with small, processed items and in localized domestic markets. Neither the responses to Notification to Parties No. 2023/136 or available studies provide clear evidence suggesting that the mammoth ivory trade impacts the conservation of elephants in range States. Rather, available information seems to suggest that the increase in trade in mammoth ivory might have contributed to reducing the price and demand for elephant ivory, thus reducing negative impact on elephant populations.
38. Considering the study findings, it seems that including mammoth ivory in CITES Appendix II would have limited benefit and might even be counterproductive. Such inclusion may disincentivize market actors from utilizing mammoth ivory as a substitute for elephant ivory, which could inadvertently lead to an increase in illegal trade in elephant ivory and an increase in elephant poaching. In addition, any international regulations pertaining to export and import permits for the international trade of mammoth ivory will likely introduce new administrative and financial burdens on Parties tasked with implementing such measures. As a result, the enforcement of regulations surrounding the international trade of an extinct species could divert limited resources away from protecting living endangered species from unsustainable international trade, which is the primary objective of the Convention. Additionally, the further work carried out by the Secretariat on this

matter, without extrabudgetary resources, has diverted scarce human and financial resources away from the core work of the Secretariat.

39. The Secretariat again draws attention to the fact that inclusion of an extinct species in the CITES Appendices falls outside the CITES mandate. Annex 3 and Annex 4, paragraph D, to Resolution Conf. 9.24 (Rev. CoP17), concern the deletion of species from Appendices I and II, not their inclusion. Therefore, the provisions provided for in these annexes are not applicable for including an extinct species in the CITES Appendices.

Recommendations

40. The Standing Committee is invited to:

- a) take note of the information and research results compiled regarding the trade in mammoth ivory as presented in the present document;
- b) encourage Parties exporting and importing mammoth ivory to strictly apply the domestic regulatory measures they have in place for trade in these specimens;
- c) encourage Parties where domestic ivory markets exist to closely monitor these markets to identify, prevent and address any attempts to launder or mislabel elephant ivory as mammoth ivory; and
- d) recommend to the Conference of the Parties that Decisions 19.102 and 19.103 on *Trade in mammoth ivory* have been implemented and can be deleted.

REFERENCES

- 1) Arctic Antiques. *The Business of Ethical Mammoth Ivory*. (Web page) [The Business of Ethical Mammoth Ivory - Arctic Antiques](#). Accessed 14.01.2024.
- 2) Aryal, A. et al. (2018) Conserving elephants depend on a total ban of ivory trade globally. *Biodiversity and conservation*. 27 (10), 2767–2775, <https://doi.org/10.1007/s10531-018-1534-x>
- 3) CITES Secretariat. (2020) *Identification Guide for Ivory and Ivory Substitutes*. https://cites.org/sites/default/files/ID_Manuals/R8_IvoryGuide_07162020_low-res.pdf
- 4) Cox, C. & Hauser, L. (2023) Ice Ivory to White Gold: Links Between the Illegal Ivory Trade and the Trade in Geocultural Artifacts. *Journal of international wildlife law and policy*. 26 (1), 22–46. <https://doi.org/10.1080/13880292.2023.2217615>
- 5) Farah, N. and Boyce, J. (2015) *Elephants and Mammoths: Can Ice Ivory Save Blood Ivory?* University of Calgary. https://econ.ucalgary.ca/manageprofile/sites/econ.ucalgary.ca.manageprofile/files/unitis/publications/1-6053905/Farah_Boyce_Elephants_and_Mammoths_September_2015.pdf.
- 6) Farah, N. & Boyce, J. R. (2019) Elephants and mammoths: the effect of an imperfect legal substitute on illegal activity. *Environment and development economics*. [Online] 24 (3), 225–251. doi:10.1017/S1355770X18000554
- 7) Gao, Y. & Clark, S. G. (2014) Elephant ivory trade in China: Trends and drivers. *Biological conservation*. 18023–30. <https://doi.org/10.1016/j.biocon.2014.09.020>
- 8) Hauenstein, S. et al. (2019) African elephant poaching rates correlate with local poverty, national corruption and global ivory price. *Nature communications*. [Online] 10 (1), 2242–2242. <https://doi.org/10.1038/s41467-019-09993-2>
- 9) Martin, E. and Martin, C. (2010) Russia's mammoth ivory industry expands: what effect on elephants? *Pachyderm*, 47, pp.26-35. <https://pachydermjournal.org/index.php/pachyderm/article/view/208/169>. Accessed 12.01.2024.
- 10) Martin, E. and Martin, C. (2011) Large and mostly legitimate: Hong Kong's mammoth and elephant ivory trade. *Pachyderm*. 50, pp.37-49. <https://pachydermjournal.org/index.php/pachyderm/article/view/265/226>. Accessed 29.12.2023.
- 11) Martin, E. & Stiles, D. (2003) The Ivory Markets of East Asia. Save the Elephants. <https://www.savetheelephants.org/wp-content/uploads/2016/11/2003EastAsiaMarkets.pdf>. Accessed 29.12.2023.
- 12) Nash, George (2022) *The trade in mammoth ivory: its role in the illegal trade in elephant ivory*. Master of Science by Research (MScRes) thesis, University of Kent. doi:[10.22024/UniKent/01.02.95670](https://doi.org/10.22024/UniKent/01.02.95670)
- 13) Ngatia, J. N. et al. (2019) Distinguishing extant elephants ivory from mammoth ivory using a short sequence of cytochrome b gene. *Scientific reports*. [Online] 9 (1), 18863. <https://doi.org/10.1038/s41598-019-55094-x>
- 14) Oard, M., 2000. The extinction of the woolly mammoth: was it a quick freeze?. *CEN Technical Journal*, 14(3), pp.24-34. <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=2ce8d59e62c510fe8112959af6786fc386bc46cf>. Accessed 29.12.2023
- 15) Stoner, Sarah. (2021) *Wildlife trade on e-commerce sites in China, with a focus on mammoth ivory: A Rapid Assessment*. Wildlife Justice Commission.

- 16) Xiao, Yu (2018) China's Ivory Market After the Ivory Trade Ban in 2018. *Traffic Briefing*. <https://www.traffic.org/site/assets/files/11150/chinas-ivory-market-post-ban.pdf>. Accessed 29.12.2023.