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## Animal trafficking and poaching: major threats to the biodiversity

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### Abstract

Animal trafficking and poaching pose significant threats to global biodiversity, causing irreversible ecological, economic, and social consequences. The illegal trade in wildlife, encompassing both live animals and their body parts, is a lucrative enterprise driven by demand for exotic pets, luxury goods, traditional medicine, and trophy hunting. This multi-billion-dollar industry exploits vulnerable species, pushing many towards the brink of extinction. Loss of keystone species disrupts natural food chains, alters vegetation dynamics, and diminishes biodiversity, thereby compromising the overall stability of ecosystems. Animal trafficking and poaching represent grave threats to global biodiversity, jeopardizing the ecological integrity of ecosystems and the well-being of human societies. The present article provides a comprehensive overview of the detrimental impacts of these illicit activities on wildlife populations and ecosystems.

**Keywords:** Wildlife, poaching, animal trafficking, biodiversity, ecosystem, illegal

### Introduction

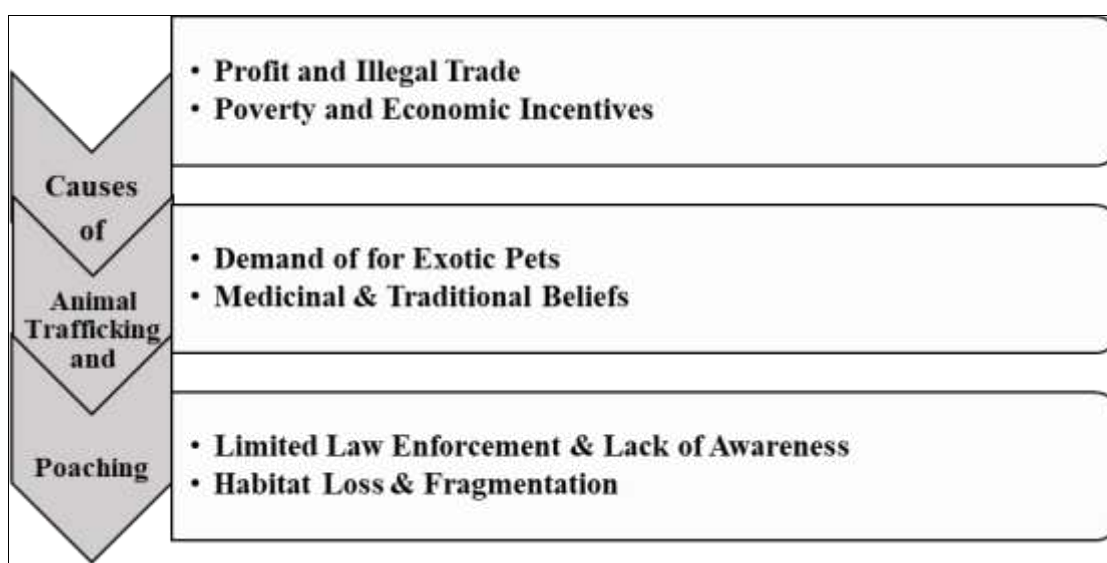
Biodiversity, the remarkable variety of life on Earth, is the result of millions of years of evolution and is fundamental to the functioning of ecosystems and the survival of all species, including humans (Groombridge & Jenkins, 2002) <sup>[11]</sup>. However, this biodiversity is under severe threat from various human activities, with animal trafficking and poaching emerging as major contributors to the loss of wildlife populations and ecological imbalance. The illegal trade in wildlife and the illicit hunting of animals not only endanger countless species (Cawthorn and Hoffman, 2015) <sup>[4]</sup> but also have far-reaching consequences for ecosystems, economies, and communities around the world. Animal trafficking, encompassing the illegal trade of live animals and their body parts, has grown into a highly profitable global enterprise. Driven by demand for exotic pets, fashion accessories, traditional medicines, and trophy hunting, this illicit trade has reached alarming levels (Wyatt, 2020) <sup>[25]</sup>. Vast sums of money change hands as vulnerable species, including mammals, reptiles, birds, and marine organisms, are captured, transported, and sold in an underground market. The scale of the problem is immense, with estimates suggesting that it ranks among the top illegal trades in the world, trailing only drugs, arms, and human trafficking (Konrad *et al.*, 2017) <sup>[14]</sup>. In parallel to animal trafficking, poaching plays a significant role in the depletion of wildlife populations. Poachers employ increasingly sophisticated techniques, including high-powered firearms and advanced tracking methods, to illegally hunt and kill animals for their valuable body parts (Mandimbihasina, 2020) <sup>[16]</sup>. This illicit activity is not limited to remote regions but often occurs within protected areas, where species are supposed to find refuge. Iconic animals like elephants, rhinos, and tigers are particularly targeted due to the high demand for their tusks, horns, and skins. However, no species is exempt from the reach of poaching, leading to a cascading effect on entire ecosystems. The consequences of animal trafficking and poaching extend far beyond the loss of individual animals. The ecological impacts are profound and wide-ranging. (Woodroffe, 2005) <sup>[24]</sup>. The removal of keystone species disrupts the intricate web of interactions within ecosystems, leading to imbalances in predator-prey relationships and vegetation dynamics. (Jordan and Scheuring, 2004) <sup>[12]</sup>. This, in turn, affects biodiversity as a whole and can have detrimental effects on other species dependent on the targeted animals for food or habitat.

The loss of biodiversity weakens ecosystem resilience, making them more susceptible to

further disturbances such as climate change and invasive species. Moreover, the illegal wildlife Trade has significant socioeconomic implications. It fuels corruption, undermines governance, and contributes to the proliferation of transnational organized crime networks. Local communities, often residing in areas rich in biodiversity, suffer the consequences as their livelihoods are threatened (Watson *et al.*, 2019) <sup>[22]</sup>. Many people depend on natural resources for income, whether through ecotourism, sustainable hunting, or gathering of non-timber forest products. The close contact between humans and animals in markets and trafficking networks provides an ideal environment for the transmission of zoonotic diseases, which can jump from animals to humans. The outbreak of the COVID-19 pandemic, believed to have originated from a wildlife market, is a stark reminder of the potential health risks associated with the illegal wildlife trade. Addressing animal trafficking and poaching requires a

comprehensive and collaborative approach. Efforts must be made to strengthen legislation, enhance law enforcement, and increase penalties for wildlife crimes. International cooperation is crucial, as the trade is often transnational in nature. Additionally, investing in community-based conservation programs, supporting alternative livelihoods, and protecting habitats are essential components of a holistic approach to combating animal trafficking and poaching (Roe and Booker, 2018) <sup>[5]</sup>. By involving local communities as key stakeholders and recognizing the economic and social value of conserving biodiversity, sustainable solutions can be developed that benefit both wildlife and people. The present article flashes on the detrimental impacts of animal trafficking and poaching on wildlife populations and ecosystems.

### Different Causes of Animal Trafficking and Poaching:



1. **Profit and Illegal Trade:** One of the primary drivers of animal trafficking and poaching is the high profitability of the illegal wildlife trade. Many species, such as elephants, rhinoceroses, tigers, and pangolins, are targeted for their valuable parts, including ivory, horns, bones, skins, and scales. Large numbers of nonhuman animals are trafficked yearly, many of whom are directed to the international pet markets, including to collectors who keep exotic animals in private zoos as status symbols (Sollund, 2011) <sup>[20]</sup>. These products are in demand in black markets for their use in traditional medicine, fashion, luxury goods, and collectibles.
2. **Poverty and Economic Incentives:** For individuals living in impoverished regions, engaging in wildlife trafficking, or poaching can be a means of survival or a way to generate income. The illegal wildlife trade offers significant financial incentives, particularly in areas with limited alternative economic opportunities. The empowerment of communities to manage their own resources through strengthened land and resource rights can be a strong motivating force (Cooney *et al.*, 2018) <sup>[5]</sup>.
3. **Demand for Exotic Pets:** The desire for rare and exotic animals as pets drives a significant portion of the animal trafficking industry. Wildlife trade is strongly phylogenetic ally conserved, and the hotspots of this trade are concentrated in the biologically diverse tropics (Scheffers, 2019) <sup>[19]</sup>. The demand for exotic species, such as parrots, turtles, and reptiles, fuels the illegal trade, as individuals seek to own unique and unconventional pets.
4. **Medicinal and Traditional Beliefs:** The use of animal parts in traditional medicine and cultural practices contributes to the demand for wildlife products. World Health Organization (WHO) estimates that as many as 80% of the world's more than six billion people rely primarily on animal and plant-based medicines (Alves and Rosa, 2005) <sup>[3]</sup>. Animal parts, such as rhino horns and tiger bones, are erroneously believed to possess healing properties, perpetuating the illegal trade.
5. **Profit-Driven Market:** The illegal trade of animal products, including ivory, skins, and furs, generates substantial profits for organized criminal networks. The threat of organized crime groups' involvement in the wildlife trade exists on many levels, including powerful networks and a more grassroots division of smaller-scale opportunistic crimes facilitated by corrupt officials (Wittig, 2017) <sup>[23]</sup>. The economic incentives associated with animal trafficking incentivize poaching and the smuggling of wildlife across borders.
6. **Limited Law Enforcement and Corruption:** Inadequate enforcement of wildlife protection laws and corruption within law enforcement agencies enable the illegal wildlife trade. Effective enforcement against ITW and community engagement can –and should – be

mutually reinforcing (Cooney *et al.*, 2018) <sup>[5]</sup>. Bribery, collusion, and weak legal frameworks allow poachers and traffickers to operate with relative impunity.

7. **Lack of Awareness and Education:** A lack of awareness about the ecological importance of wildlife and the negative consequences of poaching and trafficking contributes to the ongoing demand. New concepts and deeper scientific understanding of WTN structure are needed to help understand the dynamics of the interaction between disturbance and resilience while taking into account the socio-environmental context (Gore *et al.*, 2023) <sup>[10]</sup>. Educating local communities, consumers, and potential buyers about the ecological and ethical implications can help combat this issue.
8. **Political Instability and Armed Conflicts:** Regions affected by political instability and armed conflicts often experience weakened governance and law enforcement. This provides opportunities for armed groups and criminal networks to exploit wildlife resources and engage in illegal trade to finance their activities. The risks of violence associated with conflicting political economies over natural resources and the opportunities for armed insurgency due to resource plunder (Billon, 2001) <sup>[15]</sup>.
9. **Habitat Loss and Fragmentation:** Destruction and fragmentation of natural habitats due to factors like deforestation, urbanization, and industrial development can displace wildlife and disrupt ecosystems. Wildlife trade influences species but moreover disturbs environmental intelligence and can lead to cascading impacts on other species inside the environment. Di Minin (2015) <sup>[6]</sup> emphasized the pressing requirement for expanded law requirements and preservation measures to combat natural life poaching and secure species differences in sub-Saharan Africa. This, in turn, increases human-wildlife conflict and the likelihood of poaching, as animals may encroach on human settlements or become more accessible to poachers.

### Impacts of Animal Trafficking and Poaching

Animal trafficking and poaching have significant impacts on wildlife populations, ecosystems, local communities, and global conservation efforts. Here are some possible impacts:

1. **Decline in Wildlife Populations:** The primary impact of poaching and animal trafficking is the decline in populations of targeted species. Wildlife trade threatens terrestrial vertebrate species with extinction, primarily via overexploitation (Maxwell *et al.*, 2016) <sup>[17]</sup>. Many animals, such as elephants, rhinoceroses, tigers, and pangolins, are highly vulnerable to overexploitation due to their slow reproduction rates and low population numbers. This can push these species closer to extinction (Almeida *et al.*, 2023) <sup>[2]</sup>.
2. **Disruption of Ecosystems:** Wildlife plays a crucial role in maintaining the balance and functioning of ecosystems. Removing certain species through poaching can have cascading effects on the food web, leading to imbalances and potentially destabilizing entire ecosystems. Illegal poaching is an international problem that leads to the extinction of species and the destruction of ecosystems. This disruption can impact other species, including predators, prey, and plants, ultimately affecting biodiversity and ecological resilience. (Yang *et al.*, 2014)

<sup>[26]</sup>.

3. **Loss of Biodiversity:** The decline and potential extinction of species due to poaching and trafficking contribute to the loss of biodiversity. Biodiversity loss has far-reaching consequences, as each species plays a unique role in the ecosystem and contributes to its overall health and stability. It can disrupt ecosystem services, such as pollination, seed dispersal, and nutrient cycling, which are essential for human well-being. Most of the world's biodiversity is found in developing countries that need donor support to build conservation capacity. Unfortunately, some of these countries experience high levels of political corruption, which can limit the success of conservation projects by reducing effective funding and misleading priorities (Kaufmann, 1997) <sup>[13]</sup>.
4. **Damage to the Tourism Industry:** Many countries rely on wildlife-based tourism as a significant source of revenue. Poaching and trafficking can harm the tourism industry by depleting wildlife populations and reducing the attractiveness of natural areas for visitors (Harrison *et al.*, 2015) <sup>[12]</sup>. This can result in economic losses and job cuts in tourism-dependent communities.
5. **Weakening of Conservation Efforts:** Poaching and trafficking undermine conservation efforts and make it more challenging to protect and conserve endangered species (Duffy *et al.*, 2019) <sup>[7]</sup>. Limited resources that could be used for conservation purposes are instead diverted to combat poaching activities. This can hinder the implementation of effective conservation strategies, including habitat protection, anti-poaching measures, and community engagement programs.
6. **Threats to Endangered Species:** Many endangered species, such as elephants, rhinos, and pangolins, are specifically targeted by traffickers. The relentless poaching and illegal trade exacerbate the vulnerability of these species, pushing them closer to extinction (Dunn, 2010) <sup>[8]</sup>.
7. **Disease Transmission:** Animal trafficking poses a significant risk of disease transmission between wildlife, humans, and domestic animals. The conditions in which trafficked animals are transported increase the likelihood of zoonotic diseases, such as Ebola, SARS, and COVID-19, spilling over to human populations (Tajudeen *et al.*, 2022) <sup>[21]</sup>.
8. **Socioeconomic Consequences:** The illegal wildlife trade undermines local economies that rely on sustainable wildlife tourism. Additionally, the involvement of organized crime in animal trafficking threatens social stability and can fuel corruption and violence (Ege *et al.*, 2020) <sup>[9]</sup>.

Addressing the impacts of animal trafficking and poaching requires concerted efforts in law enforcement, community engagement, public awareness, and international cooperation. It is essential to combat these activities to safeguard wildlife, preserve ecosystems, and protect the well-being of both local communities and the global environment.

### Combating Animal Trafficking and Poaching

1. **Strengthening Legislation and Law Enforcement**  
Governments should enact and enforce robust legislation, imposing severe penalties for wildlife crimes. Enhanced international cooperation, intelligence sharing, and the prosecution of traffickers are crucial to dismantling

smuggling networks.

2. **Public Awareness and Education:** Raising public awareness about the consequences of animal trafficking is essential. Education programs should focus on dispelling myths related to the use of animal products in traditional medicine and promoting sustainable alternatives.
3. **Conservation Efforts:** Investing in conservation initiatives, such as protected areas, anti-poaching measures, and habitat restoration, plays a vital role in curbing animal trafficking (Rija, Kideghesho, 2020) [18]. Supporting local communities and providing economic alternatives can reduce their dependence on the illegal wildlife trade.
4. **Collaboration and International Cooperation:** Addressing animal trafficking requires a collaborative approach among nations (t Sas-Rolfes *et al.*, 2019) [1]. Cooperation between governments, conservation organizations, law enforcement agencies, and local communities is crucial to combat this transnational crime effectively.

### Conclusion

The present article has attempted to assemble all the relevant information regarding various aspects of animal trafficking and poaching. The detrimental impacts of animal trafficking and poaching on biodiversity are undeniable. These illegal activities not only drive countless species toward extinction but also disrupt ecosystems, economies, and communities worldwide. The urgency of addressing these threats cannot be overstated, as the consequences extend far beyond the loss of individual animals. To combat animal trafficking and poaching effectively, a multi-faceted approach is essential. Strengthening legislation, improving law enforcement efforts, and increasing penalties for wildlife crimes are crucial steps. International collaboration and cooperation are vital, as the illegal wildlife trade is a global issue that transcends borders. Education and public awareness campaigns play a pivotal role in reducing demand for illegal wildlife products. By promoting ethical consumption practices and highlighting the importance of biodiversity conservation, we can foster a mind-set shift and discourage the support of the illicit trade. Addressing the root causes of these illegal activities, such as poverty and lack of economic opportunities, is essential for sustainable solutions. By providing support for sustainable livelihoods and promoting the value of wildlife in local economies, we can foster a sense of ownership and responsibility towards biodiversity conservation. Ultimately, the fight against animal trafficking and poaching requires the collective efforts of governments, non-governmental organizations, communities, and individuals. By working together, we can curtail the demand for illegal wildlife products, enhance protection measures, and ensure the preservation of biodiversity for future generations.

### References

1. T Sas-Rolfes M, Challender DW, Hinsley A, Veríssimo D, Milner-Gulland EJ. Illegal wildlife trade: Scale, processes, and governance. *Annual Review of Environment and Resources*. 2019;44:201-28.
2. Almeida RJ, Bonachela JA, Lockwood JL. Multiple co-occurring Bio-economic drivers of overexploitation can accelerate rare species extinction risk. *Journal of Applied Ecology*. 2023;60(5):754-63.
3. Alves RR, Rosa IL. Why study the use of animal products in traditional medicines? *Journal of ethno biology and ethno medicine*. 2005;1:1-5.
4. Cawthorn DM, Hoffman LC. The bush meat and food security nexus: A global account of the contributions, conundrums, and ethical collisions. *Food Research International*. 2015;76:906-25.
5. Cooney R, Roe D, Dublin H, Booker F. Wildlife, wild livelihoods: Involving communities in sustainable wildlife management and combatting the illegal wildlife Trade. *Combating illegal Wildlife Trade*; c2018.
6. Minin DI. Identifying determinants of effective anti-poaching ranger patrols across African savannahs. *Biological Conservation*. 2005;191:758-765.
7. Duffy R, Massé F, Smidt E, Marijnen E, Büscher B, Verweijen J, *et al.* Why we must question the militarisation of conservation. *Biological conservation*. 2019;232:66-73.
8. Dunn KM. Use of sub-saharan vultures in traditional medicine and conservation and policy issues for the African grey parrot (*Psittacus erithacus*) (Doctoral dissertation, Clemson University); c2010.
9. Ege GA, Howe G, Schloenhardt A, Schwarzenegger C. Criminalisation of Wildlife Trafficking. *Sui Generis*. 2020;9:245-70.
10. Gore ML, Griffin E, Dilkina B, Ferber A, Griffis SE, Keskin BB. Advancing interdisciplinary science for disrupting wildlife trafficking networks. *Proceedings of the National Academy of Sciences*. 2023;120(10):e2208268120.
11. Groombridge B, Jenkins M. *World atlas of biodiversity: earth's living resources in the 21<sup>st</sup> century*. Univ. of California Press; c2002.
12. Harrison M, Roe D, Baker J, Mwedde G, Travers H, Plumptre A. *Wildlife crime: a review of the evidence on drivers and impacts in Uganda*. IIED, London. 2015.
13. Jordan F, Scheuring I. Network ecology: Topological constraints on ecosystem dynamics. *Physics of Life Reviews*. 2004;1(3):139-72.
14. Kaufmann D. Corruption: the facts. *Foreign policy*. 1997;1:114-31.
15. Konrad RA, Trapp AC, Palmbach TM, Blom JS. Overcoming human trafficking via operations research and analytics: Opportunities for methods, models, and applications. *European Journal of Operational Research*. 2017;259(2):733-45.
16. Le Billon P. The political ecology of war: natural resources and armed conflicts. *Political geography*. 2001;20(5):561-84.
17. Mandimbihasina AR, Woolaver LG, Concannon LE, Milner-Gulland EJ, Lewis RE, Terry AM, *et al.* The illegal pet trade is driving Madagascar's plowshare tortoise to extinction. *Oryx*. 2020;54(2):188-96.
18. Maxwell SL, Fuller RA, Brooks TM, Watson JE. Biodiversity: The ravages of guns, nets, and bulldozers. *Nature*. 2016;536(7615):143-5.
19. Rija AA, Kideghesho JR. Poachers' strategies to surmount anti-poaching efforts in Western Serengeti, Tanzania. *Protected Areas in Northern Tanzania: Local Communities, Land Use Change, and Management Challenges*; c2020. p. 91-112.
20. Scheffers BR, Oliveira BF, Lamb I, Edwards DP. Global wildlife trade across the tree of life. *Science*. 2019;366(6461):71-6.

20. Sollund R. Animal trafficking and trade: Abuse and species injustice. In *Emerging issues in green criminology: Exploring power, justice, and harm*. London: Palgrave Macmillan UK. 2013;6:72-92.
21. Tajudeen YA, Oladunjoye IO, Bajinka O, Oladipo HJ. Zoonotic Spill over in an Era of Rapid Deforestation of Tropical Areas and Unprecedented Wildlife Trafficking: Into the Wild. *Challenges*. 2022;13(2):41.
22. Watson R, Baste I, Larigauderie A, Leadley P, Pascual U, Baptiste B, *et al*. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES Secretariat: Bonn, Germany; c2019. p. 22-47.
23. Wittig T. Poaching, wildlife trafficking, and organized crime. In *Poaching, Wildlife Trafficking and Security in Africa*. Routledge; c2017. p. 77-101.
24. Woodroffe R, Thirgood S, Rabinowitz A. The impact of human-wildlife conflict on natural systems. *Conservation biology series-Cambridge*. 2005;9:1.
25. Wyatt T, van Uhm D, Nurse A. Differentiating criminal networks in the illegal wildlife trade: organized, corporate and disorganized crime. *Trends in Organized Crime*. 2020;23:350-66.
26. Yang R, Ford BJ, Tambe M, Lemieux A. Adaptive resource allocation for wildlife protection against illegal poachers. In *Aamas*; c2014. p. 453-460.