

Vanishing Diversity: Global Threats to Flora and Fauna

pp. 97-103, 2025, ISBN- 978-81-985978-7-8

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Publisher: M/S Academic Publishers & Distributors, Lucknow, India

DOI: <https://doi.org/10.5281/zenodo.17818932>



UNDERSTANDING OF ILLEGAL WILDLIFE TRADE

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(Received 10 August 2025, Revised 6 September 2025, Accepted 11 September 2025)

ABSTRACT : The ongoing battle against illegal poaching is crucial for the survival of numerous endangered species and the preservation of biodiversity. This type of illegal activity not only threatens specific populations but also destabilizes entire ecosystems. The dire consequences of poaching extend to species extinction. The illegal wildlife trade has accelerated the decline of various species, some of which are critically endangered. The loss of these keystone species disrupts ecological balance and can lead to a cascade of other negative effects within their habitats. Biodiversity is fundamental for ecosystem health. Each species plays a crucial role in environmental stability, and the loss of biodiversity threatens to unravel the intricate web of life that supports various ecosystems. Poaching has devastating effects on wildlife populations, leading to significant declines in species numbers. In this chapter, we discuss the basics of illegal wildlife trade and its consequences on the environment and humanity.

Key words : Ecosystem health, illegal wildlife trade, global problem, protected flora.

Introduction

Illegal Wildlife Trade (IWT) is defined as “illegal activities harming the environment and aimed at benefitting individuals or groups or companies from the exploitation of, damage to, trade or theft of natural resources”. IWT encompasses obtaining, capturing, poaching, smuggling, importing, exporting, processing, possessing, collecting, and consumption of wild flora and fauna, including derivatives, parts, and products of species that are regulated or protected by national and/or international laws (South and Wyatt, 2011).

It has been shown that overexploitation of natural resources, which includes IWT, might be an even bigger driver for the current biodiversity loss than climate change (Maxwell *et al*, 2016). This 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. Wildlife crime is a global problem, and the protected flora and fauna are severely impacted by poacher activities (Anagnostou *et al*, 2021). 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).

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). 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).

Taking all these factors into account, IWT is no longer an emerging issue but is recognised as a serious crime by the International Criminal Police Organization (INTERPOL) and the United Nations Office on Drugs and Crime (UNODC). International trade of endangered species is regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which was founded to ensure that international trade does not threaten the survival of wild species. To date, its appendices cover over 38,700 animal and plant species (CITES, 2023).

Causes of Illegal Wildlife Trade

High Profitability: One of the primary drivers of illegal wildlife trade is the high profitability. Many species, such as elephants, rhinoceroses, tigers and pangolins, are targeted for their valuable parts, including ivory, horns, bones, skins and scales (Sollund, 2011). These products are in demand in black markets for their use in traditional medicine, fashion, luxury goods, and collectibles.

Demand for Exotic Pets : The desire for rare and exotic animals as pets drives a significant portion of the animal trafficking industry. Large numbers of nonhuman animals are trafficked annually, many of whom are directed to the international pet markets, including to collectors who keep exotic animals in private zoos as status symbols (Scheffers, 2019). Individuals seek to own unique and unconventional pets. The demand for exotic species, such as parrots, turtles, and reptiles, fuels the illegal trade.

Medicinal and Traditional Beliefs : The use of animal parts in traditional medicine and cultural practices contributes to the demand for wildlife products. The 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). Animal parts, such as rhino horns and tiger bones, are erroneously believed to possess healing properties, perpetuating the illegal trade.

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 a deeper scientific understanding of WTN structure are needed to help comprehend the dynamics of the interaction between disturbance and resilience, while taking into account the socio-environmental context (Gore *et al*, 2023). Educating local communities, consumers, and potential buyers about the ecological and ethical implications can help combat this issue.

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, as well as the opportunities for armed insurgency due to resource plunder (Billon, 2001).

Consequences of Illegal Wildlife Trade on the Environment, Humans and Biodiversity

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

Decline in Wildlife Populations : The IUCN red list shows that at least 5209 animal species are near threatened or threatened due to “use and trade”. Overexploitation can directly lead to loss of genetic diversity, population declines, and, in the worst case, (local) extinctions of species. This loss of genetic diversity in affected populations can lead to inbreeding depression and, if continued, result in a population collapse and maybe even species extinction. The primary impact of poaching and animal trafficking is the decline in populations of targeted species. The wildlife trade poses a significant threat to terrestrial vertebrate species, primarily through overexploitation (Maxwell *et al*, 2016). 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).

Disruption of Ecosystems and Loss of Biodiversity : Wildlife is essential for sustaining ecosystem balance and functionality. The overexploitation of wild species severely threatens ecosystem health, diversity, and stability. Poaching, by removing key species, triggers cascading impacts on food webs, creating imbalances that may destabilize entire ecosystems. The decline or extinction of species due to poaching and trafficking significantly accelerates biodiversity loss (Mozer, 2023). Since each species contributes uniquely to ecosystem health, biodiversity loss undermines critical ecological services such as pollination, seed dispersal, and nutrient cycling, which are vital for human survival (Kaufmann, 1997). Illegal poaching, as a global issue, not only drives species toward extinction but also degrades ecosystems. Such disturbances affect predators, prey and plant communities alike, ultimately diminishing biodiversity and weakening ecological resilience (Yang *et al*, 2014).

Weakening of Conservation efforts : Poaching and wildlife trafficking weaken conservation initiatives, making it increasingly difficult to safeguard endangered species (Duffy *et al*, 2019). Resources that could otherwise support conservation are often redirected toward addressing illegal hunting, thereby limiting the scope of effective strategies such as habitat preservation, anti-poaching patrols and community-based programs. Species like elephants, rhinos, and pangolins are prime targets of traffickers, and the continuous pressure of poaching and illegal trade heightens their vulnerability, driving them closer to extinction.

Human Health and Safety : The illegal wildlife trade can pose public health risks, as it may involve the sale of unregulated and potentially contaminated animal products, contributing to the spread of diseases and zoonotic infections. Examples include the African swine fever,

introduced to the European Union (EU) through illegally traded meat (Costard *et al*, 2013), or HIV transmitted to humans via hunting and butchering of non-human primates (Pike *et al*, 2010), causing a major pandemic with over 35 million deaths worldwide (Bell and Bedford, 2017). In general, the international wildlife trade of animals and plants, and their products, e.g., bushmeat, exotic pets, or plants, are major hazard for disease transmission (Campbell-Staton, 2021).

Socioeconomic Consequences : The illegal wildlife trade poses a serious threat to local and national economies, particularly in regions that depend on sustainable wildlife-based tourism for income and employment. Beyond economic impacts, the strong involvement of organized criminal networks in wildlife trafficking destabilizes societies by fostering corruption, insecurity, and even violence (Ege *et al*, 2020). According to World Bank estimates, governments lose an average of 15 million USD in tax revenues each year as a direct consequence of IWT. In addition, approximately 15 million USD worth of ecosystem services are lost annually, though this figure is likely a significant underestimate since many ecological functions remain unquantified (World Bank, 2019). These financial losses hinder socio-economic progress, as funds lost through tax evasion and environmental degradation could otherwise be invested in essential public services, community development, and poverty alleviation. Ultimately, IWT not only erodes biodiversity but also undermines the foundations of economic stability and sustainable growth.

National stability, security and safety : Like other criminal activities, IWT also negatively affects national stability and security. Associated corruption of political parties, governmental authorities, law enforcement, and the judiciary weakens legal systems, impedes the functioning of legitimate structures, and destabilises governments (UNODC, 2016). Moreover, organised crime groups may use violence against civilians to enforce actions, especially if bribery can be used to avoid penalties (Guymon, 2000; Zimmerman, 2003). Ultimately, this can also lead to human rights violations (Wyatt, 2013). Furthermore, the protection of endangered wildlife, especially of iconic large mammal species such as rhinos, from poaching is increasingly militarised (Duffy *et al*, 2019). This can lead to the endangerment of local communities by intimidation and violence.

Preventive Strategies for Illegal Wildlife Trade

Strengthening Law Enforcement : Increase the number and presence of forest guards and law enforcement personnel in vulnerable areas to deter and apprehend wildlife traffickers. Implement stringent penalties and prosecution of offenders under the Wildlife (Protection) Act, 1972, to act as a deterrent. The legal framework that provides for the protection of India's wildlife and regulates the trade and commerce in wild animals and articles made from them.

Community Engagement and Awareness : Conduct awareness campaigns and educational programs within local communities to highlight the ecological importance of wildlife and the consequences of trafficking. Foster community involvement in wildlife conservation efforts through the formation of local watchdog groups and reporting mechanisms. Evidence suggests that involving local communities in conservation efforts can lead to better protection of wildlife and their habitats.

Utilization of Technology: Implement surveillance technologies such as camera traps, drones and satellite imaging to monitor and track illegal activities in remote areas. Develop a wildlife crime database and analytical tool for proactive intervention (Phelps, 2016). Technological advancements have proven to be effective in monitoring and protecting wildlife, as well as in law enforcement against wildlife crimes.

Strengthening Border Controls: Enhance border surveillance and cooperation between state agencies to curb the cross-border trafficking of wildlife and their derivatives. Implement customs and border control measures to detect and confiscate wildlife contraband being smuggled across international borders (Wyott *et al*, 2018). Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Collaboration and Partnerships: Foster collaboration between governmental agencies, non-governmental organizations, and international stakeholders to share resources, intelligence, and best practices. Engage in joint operations and information sharing with neighbouring states and countries to combat transnational wildlife trafficking networks effectively. Interpol's Environmental Crime Programme-Interpol provides a platform for international collaboration and information sharing to combat environmental crimes, including wildlife trafficking.

Economic Alternatives: Promote sustainable livelihood opportunities and eco-tourism initiatives in wildlife-rich areas to reduce the economic incentives driving wildlife trafficking. Support community-based conservation enterprises that offer viable economic alternatives to wildlife exploitation and trade. Sustainable tourism can contribute to the conservation of wildlife and habitats while providing economic benefits to local communities.

Conclusion

This chapter is an attempt 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. Advancements in technology offer promising tools for combating poaching. Drones, satellite imagery, and GPS tracking enhance monitoring efforts, allowing for real-time interventions against poaching.

activities. Involving local communities in conservation efforts is crucial for the success of anti-poaching strategies. When communities are educated about the value of wildlife and supported through sustainable practices, they are more likely to protect their natural resources rather than exploit them.

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.

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