WILDLIFE CRIME IN INDIA: AN EXPANDING THREAT TO BIODIVERSITY AND NATIONAL SECURITY

Shivani Singh, Assistant Professor, Bihar Institute of Law, Patna, India

Aditya Varma, Research Scholar, School of Law, GITAM Deemed University, Visakhapatnam, India

ABSTRACT

Wildlife crime has emerged as a significant threat to global biodiversity, ecological stability, and national security. India, recognized as one of the world's most megadiverse countries, faces mounting challenges from illegal poaching, trafficking, and habitat destruction. This article delves into the complex dynamics of wildlife crime in India, examining the legal framework, major trafficking routes, commonly smuggled species, the role of technology and air transport, enforcement efforts, rehabilitation programs, and the need for community engagement. Despite the presence of robust legislation and international commitments like CITES, enforcement hurdles, digital trafficking networks, and demand-driven exploitation continue to endanger India's rich flora and fauna. By exploring systemic challenges and potential solutions, this article advocates for a multidimensional approach involving legislative reforms, international collaboration, technological innovations, and civic responsibility to curb wildlife crimes and safeguard the nation’s ecological heritage.

Keywords: Wildlife Crime, Biodiversity, Poaching, Wildlife Trafficking, India, CITES, Forest Law, Conservation, Air Transport Smuggling, Wildlife Protection Act, Exotic Species, Habitat Destruction, Enforcement Mechanism, Animal Rehabilitation

Introduction

Crimes against wildlife and forests have emerged as a severe and continuously escalating global crisis. These illegal activities pose an existential threat not only to the rich flora and fauna of our planet but also to the delicate ecological balance that sustains life. The destruction of natural habitats and the illegal exploitation of wildlife for trade and profit endanger both biodiversity and the long-term ecological stability of our environment (Dorst, 1991; Zhou et al., 2016). Furthermore, such crimes negatively impact the socioeconomic development of countries, especially in biodiversity-rich regions like India.

India's wildlife has suffered from relentless poaching, trafficking, and habitat degradation driven by human encroachments, urbanization, deforestation, and illegal trade. Despite possessing a comprehensive legal framework and being a signatory to multiple international agreements like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), India remains one of the top 20 countries affected by wildlife trafficking and ranks among the top ten for wildlife smuggling via air transport. The ever-expanding demand for wildlife products—ranging from luxury goods to traditional medicine—has propelled illegal wildlife trade into becoming the fourth-largest international criminal activity, valued at an estimated 15 billion euros annually, trailing only drugs, arms, and human trafficking (WWF, 2021).

Global Trafficking Network and Wildlife Crime

Wildlife trafficking is a transnational organized crime involving complex networks that operate across continents. Countries act as sources, transits, and destinations for various wildlife species and their derivatives. These trafficked animals and plants are exploited for multiple purposes including food, medicine, pets, religious rituals, traditional cures, luxury items, and fashion accessories (Carter et al., 2016; Gore et al., 2016).

The illegal wildlife trade includes the hunting, capture, and sale of protected flora and fauna without authorization, often resulting in the brutal killing or transportation of animals in inhumane conditions. From exotic reptiles and birds to rare orchids and timber, every element of nature is vulnerable to exploitation. What makes wildlife trafficking more dangerous is the demand-driven nature of the crime; the supply chain thrives because a market exists (Toland et al., 2020).

Despite international collaborations and legal commitments, including India's membership in CITES, enforcement continues to face significant challenges due to porous international borders, lack of inter-agency coordination, corruption, and the rapid proliferation of online and dark web marketplaces.

India's Role in Wildlife Trafficking

India is categorized as a "megadiverse" nation, accounting for approximately 8% of the world's known wildlife. This biodiversity has, paradoxically, made India a hotspot for wildlife trafficking, serving as a source, transit, and destination. The country shares long, porous borders with China, Myanmar, Nepal, and Bangladesh—regions with high demand for wildlife products. This geographical reality, coupled with a booming aviation sector and the expansion of e-commerce and social media platforms, has enabled traffickers to exploit digital and physical infrastructures to smuggle flora and fauna.

The Wildlife (Protection) Act of 1972 is India's primary legislative instrument to combat wildlife crime. The Act bans the hunting and trading of around 1,800 species of animals and plants, including their body parts, derivatives, and trophies. Nevertheless, gaps remain in the enforcement and legal framework, especially regarding exotic species. The Ministry of Environment, Forests and Climate Change (MoEFCC) launched a Voluntary Disclosure Scheme in 2020 mandating individuals to declare possession of exotic species by March 15, 2021. Although a significant number of people complied, enforcement against undeclared possession remains limited due to lack of capacity and regulatory clarity.

Species Commonly Trafficked in India

A comprehensive analysis of seizures by the Directorate of Revenue Intelligence and reports such as "Smuggling in India 2020-21" and TRAFFIC indicate that Indian wildlife species such as ivory, pangolins, Indian star tortoises, red sandalwood (Pterocarpus santalinus), and ornamental fishes are among the most heavily trafficked.

Ornamental fish such as the Channa barca (barca snakehead) and zebra loach are being exploited to near extinction for the aquarium trade. Pangolins are poached for their scales and meat, primarily for export to East Asian markets. Body parts of apex predators such as tigers and leopards are trafficked for traditional medicine and black magic rituals. TRAFFIC has also

reported increasing smuggling of exotic species like red-eared slider turtles, kangaroos, marmosets, tamarins, parrots, lorises, and iguanas. A widely circulated 2022 video of a dehydrated kangaroo rescued in West Bengal is a chilling reminder of the extent of the problem.

Trafficking Routes and Air Transport Networks

Wildlife trafficking routes in India are largely shaped by geography and infrastructure. The Northeast corridor, including Guwahati, Dimapur, and Imphal, is a primary conduit for cross-border wildlife smuggling into China and Southeast Asia. Other important land routes include Indo-Nepal and Indo-Myanmar borders. West Bengal's Dooars region has emerged as a key transit hub for birds and reptiles.

India's growing aviation sector has inadvertently facilitated trafficking. According to a study by Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES), India ranks 10th globally in terms of wildlife trafficking incidents at airports. Between 2011 and 2020, airports such as Chennai, Mumbai, and Delhi reported thousands of seizure incidents involving reptiles, mammals, and exotic birds hidden in checked luggage or cargo.

Notably, Chennai International Airport accounted for 36.1% of these seizures, followed by Mumbai's Chhatrapati Shivaji International Airport (14.8%) and Delhi's Indira Gandhi International Airport (11.3%). Over 4,000 kg of wildlife derivatives—including ivory, pangolin scales, and red sanders—were seized in this period.

Enforcement, Technological Innovations, and Legal Amendments

While traditional surveillance remains essential, technology now plays a pivotal role in wildlife crime prevention. Artificial Intelligence (AI), Geographic Information Systems (GIS), drone surveillance, GPS tagging, infrared night-vision cameras, and the Spatial Monitoring and Reporting Tool (SMART) are increasingly being used to track poachers and trafficking activities (Norman, 2008; Gonzalez et al., 2016).

India's Wildlife (Protection) Amendment Act, 2022, introduced a new Schedule IV that includes exotic species under regulatory oversight. It also allows the designation of a Management and Scientific Authority to advise on import/export issues. However, the Act still lacks clear provisions for marine wildlife, an oversight that must be urgently addressed.

Law enforcement agencies, especially forest officials and police, are being trained in wildlife crime detection and community-based monitoring. In Assam, a Special Rhino Protection Force has successfully eliminated poaching incidents in recent years, demonstrating the impact of targeted intervention and local involvement.

Rehabilitation, Conservation, and Habitat Restoration

Wildlife crime prevention must also focus on rehabilitation and conservation. Rescue and rehabilitation centres for seized animals are critical, yet most zoos lack the infrastructure to care for confiscated exotic species. Programs such as "Project Tiger," "Project Elephant," and "Project Crocodile" have shown success, particularly in species population revival.

There is a need to integrate similar programs for lesser-known but critically endangered species like pangolins, lorises, and freshwater turtles. The tiger population in India, for example, has risen from 1,411 in 2006 to over 3,000 in 2022 due to sustained conservation efforts.

Preserving habitats is equally essential. Recent guidelines under the Forest (Conservation) Act, 1980, discourage tourism and commercial activities in core forest areas, helping minimize human-animal conflicts (Mattison et al., 2005; Mekonen, 2020).

International and Interagency Collaboration

Global coordination is key to curbing transnational wildlife crime. INTERPOL's Wildlife Crime Working Group, the UN Environment Programme, TRAFFIC, WWF-India, and the Wildlife Crime Control Bureau (WCCB) have made strides in intelligence sharing, forensic capacity-building, and cross-border enforcement.

The Directorate of Revenue Intelligence works closely with Indian Customs under the World Customs Organization's Green Customs initiative. Indian airports, especially Bengaluru, have set up forest cells to monitor smuggling.

Training programs, such as the 20-minute wildlife awareness module developed by the International Air Transport Association (IATA), are raising awareness among airline and airport staff. Wildlife forensics, including DNA barcoding and bioinformatics, now supports enforcement by enabling accurate species identification and source tracing.

Role of Citizens and Civil Society

The fight against wildlife crime is not just the responsibility of governments and agencies—it requires civic participation. Article 51A(g) of the Indian Constitution declares it a fundamental duty of every citizen to protect the environment and wildlife. Responsible tourism, avoiding products made from animal derivatives, supporting conservation NGOs, and participating in citizen science programs are ways the public can contribute.

India has also started destroying seized wildlife contraband to send a strong message against poaching and illegal trade. These symbolic acts, coupled with sustained awareness campaigns, can shift public perception and reduce demand.

Conclusion

Despite legislative advancements and increased enforcement efforts, wildlife crime in India continues to thrive in increasingly sophisticated ways. The 20% drop in reported crimes in 2021 is encouraging, but the number of animals seized remains alarmingly high. A combination of stricter laws, technological solutions, global partnerships, and public engagement is essential to address the root causes and mechanisms of this illicit trade (Gonzalez et al., 2016; Pires et al., 2022).

Protecting India's natural heritage is not merely a matter of national pride—it is a constitutional obligation, an environmental imperative, and a global necessity. Only a united front can ensure that future generations inherit a planet still teeming with the wild wonders we are privileged to witness today.

References

1. Carter NH, Lopez-Bao JV, Bruskotter JT, Gore M, Chapron G, Johnson A, Epstein Y, Shrestha M, Frank J, Ohrens O, Treves A (2016) A conceptual framework for understanding illegal killing of large carnivores. Ambio 46(3):251–264. https://doi.org/10.1007/s13280-016-0852-z

2. Cui Q, Ren Y, Xu H (2021) The escalating effects of wildlife tourism on human-wildlife conflict. Anim (Basel) 11:5. https://doi.org/10.3390/ani11051378

3. Dorst J (1991) Impact of wildlife on the environment. Rev Sci Tech 10(3):557–593.

4. Duffy R, St John FA, Buscher B, Brockington D (2015) Toward a new understanding of the links between poverty and illegal wildlife hunting. Conserv Biol 30(1):14–22. https://doi.org/10.1111/cobi.12622

5. Gore ML, Lute ML, Ratsimbazafy JH, Rajaonson A (2016) Local perspectives on environmental insecurity and its influence on illegal Biodiversity Exploitation. PLoS ONE 11:e0150337. https://doi.org/10.1371/journal.pone.0150337.

6. Gonzalez LF, Montes GA, Puig E, Johnson S, Mengersen K (2016) Unmanned aerial vehicles (UAVs) and artificial intelligence revolutionizing wildlife monitoring and conservation. Sens (Basel) 16:1

7. Hughes AC (2021) Wildlife trade. Curr Biol 31(19):R1218–R1224. https://doi.org/10.1016/j.cub.2021.08.056

8. Kolipakam V, Singh S, Ray S, Prasad L, Roy K, Wakid A, Qureshi Q (2020) Evidence for the continued use of river dolphin oil for bait fishing and traditional medicine: implications for conservation. Heliyon 6(8):e04690. https://doi.org/10.1016/j.heliyon.2020.e04690

9. Lemly AD, Kingsford RT, Thompson JR (2000) Irrigated Agriculture and Wildlife Conservation: conflict on a global scale. Environ Manag 25(5):485–512. https://doi.org/10.1007/s002679910039

10. Mattison EH, Norris K (2005) Bridging the gaps between agricultural policy, land-use and biodiversity. Trends Ecol Evol 20(11):610–616. https://doi.org/10.1016/j.tree.2005.08.011

11. Mekonen S (2020) Coexistence between human and wildlife: the nature, causes and mitigations of human wildlife conflict around Bale Mountains National Park, Southeast Ethiopia. BMC Ecol 20:51. https://doi.org/10.1186/s12898-020-00319-1

12. Neme LA (2010) INTERPOL's Wildlife Crime Working Group meeting. Forensic Sci Med Pathol 6(3):223–224. https://doi.org/10.1007/s12024-010-9170-0

13. Norman SA (2008) Spatial epidemiology and GIS in marine mammal conservation medicine and disease research. Ecohealth 5(3):257–267. https://doi.org/10.1007/s10393-008-0185-x

14. Patel NG, Rorres C, Joly DO, Brownstein JS, Boston R, Levy MZ, Smith G (2015) Quantitative methods of identifying the key nodes in the illegal wildlife trade network. Proc Natl Acad Sci USA 112(26):7948–7953

15. Roe D, Booker F (2019) Engaging local communities in tackling illegal wildlife trade: a synthesis of approaches and lessons for best practice. Conserv Sci Pract 1:e26. https://doi.org/10.1111/csp2.26

16. Sharma CP, Kumar A, Vipin V, Sharma B, Singh GC, Kumar SK, Gupta (2018) Online selling of wildlife part with spurious name: a serious challenge for wildlife crime enforcement. Int J Legal Med 133:65–69. https://doi.org/10.1007/s00414-018-1795-7

17. Toland E, Bando M, Hamers M, Cadenas V, Laidlaw R, Martinez-Silvestre A, van der Wielen P (2020) Turning negatives into positives for Pet Trading and keeping: a review of positive lists. Anim (Basel) 10:12

18. Zhou XH, Wan XT, Jin YH, Zhang W (2016) Concept of scientific wildlife conservation and its dissemination. Zool Res 37(5):270–274. https://doi.org/10.13918/j.issn.2095-8137.2016.5.270