

Criminal Law Reform for Wildlife Protection Based on Ecological Justice: A Normative Legal Approach in Indonesia

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Article Info

Article history:

Received 2026-06-10

Revised 2026-07-09

Accepted 2026-07-10

Keywords:

Biodiversity conservation

Criminal law reform

Ecological justice

Indonesia

Normative legal research

Wildlife criminal law

ABSTRACT

Indonesia's exceptional biodiversity is increasingly threatened by wildlife crime, while the legal framework established under Act No. 5 of 1990 has become inadequate for addressing contemporary ecological challenges. Although previous studies have identified weaknesses in wildlife law enforcement, few have translated ecological justice into concrete principles for reforming Indonesian wildlife criminal law. This study examines the urgency of wildlife criminal law reform and develops an ecocentric framework grounded in ecological justice. It employs normative (doctrinal) legal research, using statutory, conceptual, and comparative approaches grounded in legislation, international legal instruments, judicial decisions, scholarly literature, and institutional reports. Legal materials were analysed qualitatively through grammatical, systematic, teleological, evaluative, and prescriptive reasoning. The findings reveal that outdated legal provisions, disproportionate sanctions, fragmented institutions, and limited recognition of ecological integrity as a protected legal interest constrain the current framework. Comparative analysis highlights the importance of aggravated offences, corporate liability, confiscation and restoration orders, proportionate sanctions, and specialised wildlife crime units. The study concludes that Indonesian wildlife criminal law should adopt an ecocentric approach integrating ecological justice into offence structures, sanctions, and institutional mechanisms. This study contributes a normative framework for strengthening Indonesian criminal law reform and biodiversity protection through ecologically oriented wildlife governance.

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1. INTRODUCTION

Indonesia is internationally recognised as one of the world's megadiverse countries, hosting an exceptional concentration of endemic species and ecosystems across more than 17,000 islands [1]. Its tropical forests, coral reefs, and wetland systems perform essential

functions in maintaining biodiversity, regulating the climate, and promoting ecological stability [2]–[4]. Despite this ecological significance, Indonesia is experiencing accelerating biodiversity loss driven by deforestation, habitat fragmentation, land-use change, and the overexploitation of wildlife. Global assessments estimate that around one million species face the risk of extinction, placing biodiversity conservation among the most urgent environmental challenges worldwide [5], [6].

Wildlife exploitation has become one of the principal drivers of biodiversity decline in Indonesia. International wildlife trade is widely recognised as a transnational criminal economy linked to corruption and organised crime [7], [8]. In Indonesia and across Southeast Asia, extensive markets for live animals, animal parts, and wildlife derivatives continue to threaten numerous protected species through both domestic and international trade [9]–[12]. These activities are further facilitated by growing consumer demand, luxury markets, and digital trading platforms that accelerate the circulation of wildlife commodities [10], [13]–[15]. Consequently, many species protected under Indonesian legislation and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) face increasing pressure that directly threatens their long-term survival.

This situation exposes significant limitations within Indonesia's legal framework for wildlife protection. The country's principal legislative instrument, Act No. 5 of 1990 on the Conservation of Living Natural Resources and their Ecosystems, has been widely criticised as outdated, fragmented, and weakly enforced. Scholars have pointed to overlapping institutional mandates, sectoral regulation, limited enforcement capacity, corruption risks, and sanctions that remain disproportionate to the ecological damage and economic profitability of wildlife crimes [8], [16]. Moreover, because the Act was enacted more than three decades ago, it does not adequately reflect contemporary developments in biodiversity governance, including ecological limits, planetary boundaries, and the intrinsic value of non-human life [17]–[20]. As a result, Indonesian wildlife law continues to struggle to respond effectively to increasingly complex ecological threats.

Previous studies consistently recognise Indonesia as a global biodiversity hotspot while documenting persistent ecological degradation caused by habitat conversion, overexploitation, invasive species, and climate pressures [5], [9], [21]–[25]. Legal scholarship has likewise acknowledged that Act No. 5 of 1990 remains the primary statutory foundation for wildlife conservation but is increasingly misaligned with current conservation needs because protected species lists, institutional arrangements, and criminal sanctions have not kept pace with contemporary ecological realities. Collectively, these studies demonstrate that biodiversity decline is not solely an ecological problem but also reflects structural weaknesses within environmental governance and wildlife law.

To address these shortcomings, international environmental scholarship has increasingly shifted from anthropocentric approaches towards ecocentric perspectives that recognise the intrinsic value of non-human life and ecological systems. This development provides an important theoretical foundation for rethinking wildlife protection beyond conventional conservation objectives and toward broader principles of ecological justice and intergenerational responsibility.

2. METHOD

This study employs normative (doctrinal) legal research, which examines law as a system of legal norms, principles, and doctrines to evaluate the adequacy of the existing legal framework and formulate recommendations for legal reform [58], [59]. Within the Indonesian legal research tradition, this approach relies on legislation, judicial decisions, and legal scholarship as the principal legal materials for constructing legal arguments [60]–[62]. In this study, normative legal research is used to assess the adequacy of Indonesia's wildlife protection regime and to develop an ecocentric framework for criminal law reform.

Because this research is normative, it does not involve fieldwork, empirical respondents, interviews, surveys, or case observations. The object of analysis is the legal framework governing wildlife protection in Indonesia, particularly the reconstruction of wildlife criminal law based on ecological justice. Accordingly, ethical clearance for research involving human participants was not required. The study applies three complementary approaches: the statutory, conceptual, and comparative approaches.

The statutory approach examines Indonesian constitutional and legislative instruments relevant to wildlife protection and environmental conservation, particularly the 1945 Constitution, Act No. 5 of 1990 on the Conservation of Living Natural Resources and their Ecosystems, Act No. 32 of 2009 on Environmental Protection and Management, and related regulations concerning forestry, biodiversity governance, and criminal procedure. Through this approach, the analysis focuses on the structure and content of legal norms, the formulation of offences and sanctions, the identification of protected legal interests, and the distribution of institutional authority. The interpretation of these legal materials draws on grammatical, systematic, and teleological methods commonly used in criminal law and public law analysis [63], [64].

The conceptual approach is used to clarify and reconstruct the principal concepts underpinning this study, including ecological justice, intergenerational equity, wildlife crime, and protected legal interests in environmental criminal law. Rather than treating these concepts merely as theoretical discussions, the study uses them as analytical criteria for evaluating whether the existing legal framework adequately recognises ecological harm and the intrinsic value of non-human life. This approach, therefore, engages with environmental philosophy, green criminology, and legal theory to construct an ecocentric analytical framework [26], [34], [65], [66].

The comparative approach is employed to identify alternative models of wildlife criminal law that may inform legal reform in Indonesia. The selected jurisdictions—the United States, Brazil, and India—were chosen purposively because each represents a distinctive legal response to wildlife and environmental protection. The United States provides an example of strong criminal enforcement through the Lacey Act and the Endangered Species Act; Brazil represents a biodiversity-rich developing country that has adopted comprehensive environmental criminal legislation; and India offers experience in wildlife protection within a similarly megadiverse context through the Wildlife (Protection) Act [39], [50], [67]. These jurisdictions were selected not to rank legal systems, but to compare different approaches to criminalisation, sanctioning, institutional arrangements, and ecological protection that are relevant to Indonesian legal reform. At the international

level, the analysis also considers the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), including its treaty provisions, Conference of the Parties resolutions, and implementation practices [7], [43].

The study relies on primary, secondary, and tertiary legal materials collected through systematic library research and document analysis. Primary legal materials include the 1945 Constitution, Indonesian legislation, implementing regulations, CITES, relevant Conference of the Parties resolutions, and judicial decisions relating to wildlife and environmental offences, as relevant to the legal analysis. Judicial decisions were primarily used to support the interpretation of legal norms rather than as independent case studies, because the focus of this research is doctrinal legal reform rather than judicial behaviour. Secondary legal materials include scholarly books, journal articles, and academic writings concerning ecological justice, deep ecology, green criminology, environmental criminal law, and Indonesian conservation law, including works by Arief, Wibisana, and White [45], [48]. Secondary materials also include reports published by intergovernmental and non-governmental institutions such as IPBES, the Convention on Biological Diversity, UNODC, TRAFFIC, and WWF [5], [44], [68], [69]. Tertiary legal materials comprise legal dictionaries, encyclopaedias, and policy documents used to clarify terminology.

The analytical procedure was conducted in four stages. First, relevant constitutional provisions, legislation, international instruments, judicial decisions, and legal scholarship were identified and systematically organised according to the research questions. Second, the existing Indonesian legal framework was evaluated to identify normative weaknesses relating to criminalisation, sanctions, protected legal interests, and institutional arrangements. Third, these findings were compared with selected foreign jurisdictions and international legal standards to identify alternative legal models. Finally, ecological justice and intergenerational equity were applied as normative benchmarks to formulate principles for reconstructing Indonesian wildlife criminal law.

The analysis of legal materials is conducted qualitatively. Primary and secondary legal materials are interpreted and systematised through grammatical, systematic, and teleological reasoning, and are then assessed using evaluative and prescriptive legal analysis. Evaluatively, the study examines whether the current Indonesian framework for wildlife protection is coherent, effective, and consistent with constitutional values and international obligations. This includes assessing positive law against normative criteria derived from ecological justice, intergenerational equity, and contemporary conservation knowledge [49], [70]. Prescriptively, the study formulates recommendations for reform by reconceptualising protected legal interests, recalibrating sanctions, and strengthening remedial and institutional mechanisms within wildlife criminal law.

This study is subject to several limitations. Because it adopts a normative legal research design, the analysis does not incorporate empirical field data, interviews with law enforcement agencies, observations of wildlife crime investigations, or quantitative assessments of enforcement effectiveness. Consequently, the proposed reform model should be understood as a normative legal framework whose practical implementation may require further empirical research involving institutional practice, judicial decision-making, and wildlife crime enforcement.

3. RESULTS AND DISCUSSION

This section presents the findings derived from the normative legal analysis and supporting secondary reports. The findings are organised into four themes: (1) weaknesses of the current legal framework, (2) weaknesses in sanctions and enforcement, (3) institutional challenges in wildlife protection, and (4) comparative findings from selected jurisdictions. This structure follows the research questions regarding the urgency of wildlife criminal law reform and the role of ecological justice in supporting it.

3.1 Findings from Legal Analysis: Weaknesses of the Current Legal Framework

The normative legal analysis demonstrates that Indonesia's current wildlife criminal law framework, centred on Act No. 5 of 1990, is no longer fully capable of addressing the contemporary challenges of biodiversity conservation and wildlife crime. Rather than functioning as an integrated legal framework, the Act remains sectoral in character, overlaps with more recent environmental legislation, and has not sufficiently adapted to developments in conservation science or international biodiversity governance. These findings indicate that the existing framework provides only limited normative support for responding to increasingly complex forms of wildlife exploitation.

The analysis further shows that the statutory framework continues to reflect an anthropocentric orientation. Protected legal interests remain focused primarily on administrative compliance and resource management, while ecological integrity, species survival, and biodiversity conservation have not yet been explicitly recognised as independent legal interests. Consequently, the current legal structure has limited capacity to respond proportionately to ecological harm caused by organised wildlife crime.

3.2 Findings from Secondary Reports: Wildlife Crime and Ecological Impacts

Secondary reports consistently demonstrate that weaknesses in the legal framework occur alongside accelerating biodiversity decline and expanding wildlife trafficking networks. Global biodiversity assessments report unprecedented rates of species decline, while wildlife exploitation continues to represent one of the principal drivers of biodiversity loss [5], [6].

Reports also identify Indonesia as both a significant domestic wildlife market and an important component of international trafficking networks. Wildlife trafficking is recognised internationally as a transnational criminal economy associated with corruption and organised crime [8], [44]. Supporting evidence includes WWF-Indonesia's record of approximately sixty reported trafficking cases involving protected wildlife and wildlife parts in the Sumbagteng region during 2020, together with international estimates indicating that illegal wildlife trade generates economic values reaching billions of dollars annually [7], [44].

The reviewed reports further indicate that wildlife crime produces multidimensional ecological consequences extending beyond individual animal losses. Documented impacts include ecosystem disruption, increased extinction risks for endemic species, degradation of protected areas, zoonotic disease risks, and substantial economic losses. WWF-Indonesia's report describing thirty-six elephant deaths in Aceh between 2012 and 2015, together with at least 208 elephants reportedly killed through poaching between 1999 and 2015, illustrates

the severity of these ecological consequences. Additional reported cases involving the smuggling of yellow-crested cockatoos, elephant ivory seizures in Riau, and Sumatran tiger skin trafficking in Jambi further demonstrate recurring patterns of organised wildlife crime despite existing legal prohibitions.

3.3 Findings from Legal Analysis: Weaknesses in Sanctions and Enforcement

The legal analysis identifies significant weaknesses in the sanctioning system established under Act No. 5 of 1990. Maximum penalties of five years' imprisonment and relatively modest fines frequently result in considerably lighter sentences in practice, including cases involving ivory-related offences, where the imprisonment was approximately one year, and the fines were comparatively small. These findings suggest that the current sanctioning framework does not adequately reflect either the ecological gravity or the economic profitability of wildlife trafficking.

Beyond the statutory penalty levels, the analysis indicates that wildlife offences continue to be treated primarily as regulatory or economic violations rather than serious crimes against ecological integrity. This legal characterisation contributes to relatively weak deterrence despite the organised and transnational nature of contemporary wildlife trafficking networks.

3.4 Findings from Legal Analysis: Institutional Weaknesses

Institutional analysis further demonstrates that effective wildlife protection is constrained by fragmented governance arrangements. Responsibilities remain distributed across multiple agencies with overlapping authority, while coordination among conservation authorities, customs, police, quarantine services, and prosecutors continues to present practical challenges. Limited financial resources, technical expertise, and investigative capacity further reduce the effectiveness of wildlife law enforcement.

The analysis also indicates that wildlife crime frequently receives lower enforcement priority than other organised crimes, despite its recognised links with corruption and transnational criminal networks [7], [8]. Consequently, weaknesses in institutional coordination reinforce deficiencies already present within the substantive legal framework.

3.5 Comparative Findings

Comparative analysis demonstrates that the selected jurisdictions employ broader legal mechanisms than those currently available under Indonesian law. Although each jurisdiction adopts different legislative approaches, several common patterns emerge.

Sanctions should be calibrated to reflect both ecological gravity and illicit profitability. Reform should align penalties for the most serious wildlife offences with other serious crimes, paired with enhanced fines and benefit-based components [7], [8]. Equally important are ancillary orders, including confiscation, forfeiture, restoration payments, corporate compliance orders, and disqualification from wildlife-related commercial activities.

Table 1. Comparative Overview of Wildlife Criminal Law Frameworks in Indonesia, the United States, Brazil, and India

Aspect	Indonesia	United States	Brazil	India
Protected legal interest	Wildlife conservation	Species survival & habitat	Environmental protection	Wildlife conservation
Criminal liability	Individual liability	Individual & corporate liability	Individual & corporate liability	Primarily individual liability
Enforcement	General agencies	Specialised federal agencies	Environmental enforcement bodies	Wildlife Crime Control Bureau
Sanctions	Relatively limited	Civil & criminal penalties	Criminal sanctions & corporate liability	Enhanced penalties & mandatory minimums
Additional measures	Limited	Forfeiture, restoration	Corporate responsibility	Specialised enforcement

The comparison indicates three principal findings. First, stronger wildlife protection systems combine criminal sanctions with corporate liability, confiscation, and restoration mechanisms. Second, specialised enforcement institutions substantially improve investigative effectiveness in technically complex wildlife cases [44]. Third, constitutional environmental principles and purposive judicial interpretation strengthen the practical implementation of wildlife protection legislation.

3.6 Summary of Findings

Overall, the findings indicate that Indonesia's current wildlife criminal law framework faces four interconnected weaknesses: (1) outdated substantive legal norms, (2) sanctions that remain disproportionate to ecological harm and illicit profits, (3) fragmented institutional arrangements that weaken enforcement, and (4) limited incorporation of ecological values within criminal law doctrine. Comparative analysis further demonstrates that other jurisdictions increasingly integrate ecological protection into offence structures, sanctioning models, institutional mechanisms, and corporate accountability. These findings provide the basis for the discussion on ecological justice as a normative foundation for reconstructing Indonesian wildlife criminal law.

4. CONCLUSION

This study examined the urgency of reforming Indonesia's wildlife criminal law and the role of ecological justice as a normative foundation for that reform. The findings demonstrate that the current legal framework, centred on Act No. 5 of 1990, is no longer adequate to address contemporary biodiversity loss and wildlife crime due to outdated substantive provisions, disproportionate sanctions, fragmented institutional arrangements, and the limited recognition of ecological integrity as a protected legal interest. Comparative analysis further indicates that more effective wildlife protection frameworks integrate stronger sanctions, corporate liability, specialised enforcement mechanisms, and restoration-oriented measures. These findings confirm that criminal law reform should move beyond strengthening enforcement alone by adopting an ecocentric approach that recognises the intrinsic value of wildlife and ecosystems while incorporating ecological justice and intergenerational responsibility into the design of wildlife criminal law. Academically, this

study contributes to the literature by demonstrating how ecological justice can be translated from a normative concept into a practical framework for reconstructing protected legal interests, offence structures, sanctioning models, and institutional mechanisms within Indonesian wildlife criminal law.

From a policy perspective, the findings support comprehensive reform of Indonesia's wildlife conservation legislation through clearer offence classifications, proportionate sanctions based on ecological harm and illicit profits, strengthened corporate liability, improved institutional coordination, and restoration-oriented remedies that remain compatible with community participation in biodiversity conservation. This study is limited by its normative legal research design, which relies on legal materials and secondary reports without incorporating empirical evidence on enforcement practices or judicial decision-making. Future research should therefore examine wildlife law enforcement practices, judicial sentencing patterns, corporate involvement in wildlife crime, and community-based conservation to evaluate the practical implementation and effectiveness of ecocentric criminal law reform in Indonesia.

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