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# Editorial: Advancing the science of environmental justice in the international wildlife trade

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Editorial on the Research Topic
Advancing the science of environmental justice in the international wildlife trade

## Introduction

This Research Topic is dedicated to advancing the science of environmental justice in the international wildlife trade, examining diverse perspectives on both problems posed and potential solutions. We invited contributors to frame environmental justice in the context of social, species, and ecological justice, prioritizing papers that employed social science approaches. International wildlife trade, whether legal or illegal, is recognized as one of the greatest threats to biodiversity (Balvanera et al., 2019; Hughes, 2021; Hughes et al., 2023), as well as a facilitator of zoonotic disease transmission with epidemic and pandemic potential (Pavlin et al., 2009; Borsky et al., 2020). This has led to a call from human health and wildlife conservation sectors for more effective and efficient monitoring and regulation of the live animals, animal parts, and animal products that comprise this mega-industry (Borzée et al., 2020).

Nearly every aspect of wildlife-related commerce and risk mitigation measures has implications for environmental justice, yet environmental justice has not been mainstreamed in the scientific inquiry, policy, nor planning processes relative to the international wildlife trade (Arroyo-Quiroz et al.). Because international wildlife trade has diverse drivers and purposes, as well as different levels of legality, social legitimacy, regulatory authorities, and enforcement requirements, there remains an unmet need to more directly understand the complex, inter-acting environmental justice issues along the whole of the trade pathway. This includes exploring how consumer demand versus supply provision along trade chains are influenced by economic, cultural, and geographic biases

with environmental justice implications. This Research Topic helps elucidate these issues by centralizing novel and contemporary research, case studies, and perspectives. Understanding environmental justice patterns and trends is necessary for the design and support of effective regulatory frameworks that manage risks in practice, rather than merely in concept. Differentiating where and how to facilitate legal, sustainable wildlife trade from where tighter regulatory controls are warranted requires understanding both the socio-cultural drivers of human behavior and the ecological vulnerabilities of the traded species.

There also remains an unmet need to conceptualize an environmental justice framework that informs regulations of the international wildlife trade to minimize ecological deterioration, biodiversity loss and infectious disease risks while also affording justice to human communities and nations entwined in the commerce pathway. The papers in the Research Topic contribute to developing such a framework, offering conceptual models, original research, case studies, and unique perspectives. Likewise, building the capacity of more diverse individuals, organizations, and nations to share their voice in building recognition about how, when, where and why to address environmental justice issues along international wildlife trade pathways. For many of our authors, the opportunity to publish under this Research Topic created a means to share their insights, observations, and recommendations in scientific literature for the first time. We are honored to host their contributions, and we learned a lot from all of them.

Publication of all the manuscripts in this Research Topic was sponsored by a grant from the Smithsonian Life on a Sustainable Planet initiative. The Smithsonian National Zoo & Conservation Institute partnered with the International Alliance Against Health Risks in Wildlife Trade, and IUCN, to promote, coordinate, and implement the Research Topic.

## The articles

Arroyo-Quiroz et al. provide a framework for advancing environmental justice inquiry in their Perspective, "A framework for advancing the science of environmental justice along the international wildlife trade pathway". The framework is organized via three interrelated domains (social justice, wildlife species justice, and ecological justice) and intended to catalyze transparent, mutually respectful discussions about justice between conservation researchers, practitioners, and the vast array of wildlife trade stakeholders.

In "A critical environmental justice framework for the illegal wildlife trade", Green provides a Perspective at the intersection of environmental justice and wildlife crime prevention, specifically focusing on the illegal wildlife trade. By applying critical environmental justice principles, the paper explores how issues of inequality, social dynamics, and state power can inform more equitable and effective interventions along the international wildlife trade pathway. The author goes beyond normative environmental justice to propose a transformative framework rooted in sociopolitical critique, which is especially useful in the Global South.

In their Community Case Study, "Global youth as catalysts for legal and sustainable wildlife trade solutions", Anagnostou et al. recognize that the voices of youth have been underrepresented in wildlife-trade decision making. They explore how youth may contribute to achieving the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) Strategic Vision and offer ideas of how youth can be best supported in their efforts. The case study showcases youth-led innovation, including AI and digital surveillance tools for trade detection and network mapping.

In the Perspective, "Implementation biases in wildlife trade regulation foster unscientific and inequitable intervention strategies", Kolby and Goodman examine the science underpinning wildlife trade interventions. To enable healthier approaches to effective conservation and wildlife resource-use strategies, they call for greater transparency in the wildlife trade decision-making processes, as well as the scientific evidence underpinning policy frameworks. This manuscript makes the case that wildlife trade interventions may reinforce bias and injustice, particularly when "unscientific" or "racist conservation" narratives are left unchecked.

Saito conducted Original Research that explores environmental justice issues associated with illegal wildlife seizures, providing insights into animal welfare and ethical concerns post-seizure. The manuscript "Where the wild things are...stored? The management and return of seized wildlife" points to the need to better understand how wildlife seizures are dealt with on the ground, particularly given the potential of seizure management and repatriation to raise environmental and restorative justice concerns. The article draws on concrete examples from East Africa and Central Europe, exploring how both live animal seizures and wildlife contraband are managed respectively.

In "Wildlife trade dynamics: exploring bushmeat market with a view toward social and ecological justice in Ibadan Metropolis Nigeria" Olunusi focuses on the dynamics of the bushmeat trade in Ibadan Metropolis, Nigeria, exploring its economic, social, and ecological dimensions. The Original Research examines the roles of bushmeat marketers (primarily women) and highlights income gaps, the need for alternate sources of livelihood, the sustainability of wildlife use, and declining species availability. The research aims to advance environmental justice by balancing economic livelihood options with conservation efforts.

Mukanganwa et al. explore environmental justice in the context of game-meat trade in their Original Research paper, "Zoonosis and the law: a case study of legal game meat regulation and control in Zambia". To understand the game-meat trade in an environmental justice context, they conducted a literature review and surveyed subject matter experts. Ultimately, this work led to the development of recommendations for strengthening bushmeat governance in Zambia, as well as regarding Zambia's international trade engagement.

The Original Research conducted by Carpio-Dominguez et al., "Policing wildlife trafficking in northeastern Mexico: the case of Tamaulipas in 2023-2024", provides important insight into the factors that influence police response and capacity to identify wildlife trafficking in the state of Tamaulipas in northeastern Mexico. The study explores phenomena such as public insecurity,

corruption, and the lack of interest and training of the police on environmental crimes, including their impact on environmental justice processes. The authors identify factors that promote environmental justice, such as citizen collaboration and legal frameworks, and make recommendations for raising the capacity of the police to enforce environmental justice.

Zanvo et al. address environmental justice issues in the traditional medicine context in their Original Research, "Wildlife trade at the interface between deeply-rooted animal-based traditional medicine and unregulated harvesting of wild animals in West Africa". The authors use a methodological approach borrowed from the social sciences to highlight the geographical extent of the wildlife trade network in traditional medicine markets, and the diversity and conservation status of species affected by this trade in three major taxonomic groups: mammals, birds and reptiles. They also identify factors influencing the spatial distribution of traditional medicine and bushmeat markets. This study fills the gaps in scientific data on local and regional wildlife trade as is essential to understanding of the trade network.

Adebowale et al. investigate the use of traditional medicines derived from wildlife in their Original Research paper, "Utilization of fauna resources for therapeutic purposes as a barrier to species justice advocacy in Nigeria". Using a quantitative research design, they collected data through a semi-structured questionnaire distributed randomly to 165 traditional medicinal vendors. They found that animal parts are often traded in the markets for spiritual empowerment and disease treatment, which could negatively impact species justice if not properly regulated. The trade negatively impacts conservation efforts and undermines the collective endeavors of all stakeholders to promote species justice in Nigeria.

In "Delineating the environmental justice implications of an experimental cheetah introduction project in India", Joshi et al. employ Project Cheetah as a case study to explore species and social justice issues in the rewilding and restoration context, especially projects that necessitate attention by proponents and authorities responsible for issuing CITES import and export permits. They emphasize that conservation practices that prioritize respect, inclusivity, and justice are more likely to have positive outcomes for people and nature.

## A way forward

Combined and standing alone, the articles in this Research Topic make an unequivocal case for growing attentiveness to the many facets of environmental justice along international wildlife trade pathways. They also identify, each in their own way, opportunities for enhanced action addressing these injustices at local, regional, national, and international levels. They provide groundbreaking science to be built upon. The case studies demonstrate both the unique features of environmental injustice, as well as the common drivers and implications of risks, threats and loss to vulnerable persons, places, and species. Fundamentally, the authors call for and point the way toward increased vigilance, shared responsibility, and collective problem solving – advancing the science of environmental justice along the international wildlife trade pathway.

## Author contributions

JR: Conceptualization, Funding acquisition, Project administration, Supervision, Writing – original draft, Writing – review & editing. MG: Writing – original draft, Writing – review & editing. IA-Q: Writing – original draft, Writing – review & editing. IK: Writing – original draft, Writing – review & editing. NK: Writing – original draft, Writing – review & editing. GP: Writing – original draft, Writing – review & editing.

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The authors declare that the editorial was drafted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Generative AI statement

The author(s) declare that no Generative AI was used in the creation of this manuscript.

## Publisher's note



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