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Illegal animal trade in the context of the Washington Convention (CITES)

Abstract. Illegal trade in endangered species of fauna and flora poses a serious threat to biodiversity and ecosystem stability. This article analyzes the scale and nature of this phenomenon in Poland and the EU, with reference to CITES regulations, legal frameworks, and practical actions by customs authorities. The most frequently trafficked species, methods of smuggling, and both successful and unsuccessful enforcement interventions are analyzed. The role of international cooperation and non-governmental organizations in curbing smuggling is highlighted, along with the importance of public education. The analysis highlights effective elements of the system and identifies areas needing improvement, including border control, information sharing, and coordination of robement efforts. The findings underscore the need for an integrated approach to combating illegal wildlife trade.

Keywords: wildlife crime, international smuggling, CITES, biodiversity, protected species

INTRODUCTION

Illegal trade in endangered species of fauna and flora, regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) [https://cites.org/eng/disc/text.php], represents one of the most significant challenges in contemporary nature conservation. This issue is increasingly discussed not only in terms of biodiversity protection but also in the context of the evolving legal and ethical status of

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animals [Walkowicz 2021]. This phenomenon is particularly relevant in the context of global efforts to preserve biodiversity and ecological security. Poland, as a member state of the European Union, plays an important role in the control system for trade in protected species – both as a transit country and as a destination for illegal animal and plant transport [European Parliament 2016, Figura et al. 2025].

Available publications and reports highlight the multifaceted nature of the problem, encompassing both legal frameworks and the practical activities of enforcement agencies. Chackiewicz and Kostecka [2017] emphasize the key role of the Polish Customs Service in halting illegal shipments of CITES-protected specimens, while also noting the importance of officer training, international cooperation, and raising public awareness. Drzazga [2019] stresses that comprehensive social oversight and public education are essential tools for limiting the scale of smuggling.

The importance of global cooperation to counter environmental crime is further emphasized by Kowalska [2023] who argues that integrated international actions are a prerequisite for the effectiveness of legal regulations protecting endangered species. Bielecka [2023] highlights smuggling as a tangible threat to ecological security and emphasizes the need for enhanced coordination between institutions. Examples of thwarted smuggling operations, described by Listos et al. [2016], demonstrate that Poland – due to its geographic location and EU market membership – requires constant customs and logistical supervision. In terms of practical enforcement, Kapel and Kala [2016] prepared a manual for officers, highlighting the importance of training and continuous improvement in identifying CITES specimens.

This paper reviews recent literature on illegal wildlife trade, discusses successful and unsuccessful enforcement interventions, and presents international actions supporting CITES implementation. The analysis also evaluates the functioning of legal mechanisms and practical measures undertaken by CITES member states, with emphasis on selected country case studies. The aim of this study is to identify effective system components and to pinpoint areas requiring further improvement in curbing illegal trade in endangered animal species.

Literature review on illegal animal trade

This study is based on a narrative literature review aimed at synthesizing legal, institutional, and criminological perspectives on illegal wildlife trade in the context of CITES implementation. The analysis includes peer-reviewed scientific articles, official reports published by international and non-governmental organizations (including TRAFFIC, WWF, and European Union institutions), as well as selected legal acts and policy documents. The review focuses on publications released between 2010 and 2025 in order to capture recent trends in wildlife trafficking and enforcement practices. The geographical scope primarily covers Poland and the European Union, supplemented by comparative international references where relevant. The main limitation of the study arises from the reliance on seizure-based data, which reflect detected cases of illegal trade rather than its actual scale. Consequently, the presented figures should be interpreted as indicative of enforcement activity and trafficking patterns rather than comprehensive measurements of the phenomenon.

The trade sector, encompassing live animals, plants, fungi, and their derived products, plays a significant role in the global economy, with an estimated annual value of $145–220 billion. The European Union represents a major market, importing wildlife products worth approximately €100 billion. Despite the rapid expansion of legal markets, illegal wildlife trade remains a serious transnational crime, estimated at about $20 billion annually, posing a significant threat to endangered species [Biondo and Calado 2025].

Despite the formal robustness of this system, its effectiveness depends largely on national implementation and enforcement capacities. In practice, challenges arise from divergent interpretations of CITES obligations, limited institutional resources, and difficulties in verifying the legality and origin of specimens. These factors significantly affect the consistency and effectiveness of wildlife trade controls at both national and regional levels [Morton et al. 2022].

In the European Union, the implementation of CITES is further reinforced by EU Wildlife Trade Regulations, in particular Council Regulation (EC) No 338/97 and Commission Regulation (EC) No 865/2006, which constitute an autonomous legal regime directly applicable in all Member States. These regulations often introduce stricter requirements than CITES itself, including broader species coverage, enhanced permit and certification procedures, import suspensions, and harmonized enforcement standards across the EU.

In practice, EU regulations play a decisive role in shaping the legal obligations of Member States, including Poland, by ensuring uniform administrative procedures, strengthened control mechanisms, and coordinated sanctioning frameworks. Consequently, the effectiveness of wildlife trade control within the EU depends not only on compliance with CITES obligations but also on the proper application and enforcement of EU regulatory instruments [Kapel and Kala 2016, Radecki 2023, Biondo and Calado 2025].

According to TRAFFIC [2023], the most frequently seized goods in the EU include endangered eels, timber, and medicinal plants. In 2023, nearly 5,200 seizure records were reported, involving over one million specimens (including over 600,000 live animals and 10,000 live plants). The highest number of seizures occurred in Germany, France, the Netherlands, and Spain, which together accounted for approximately 75% of all reports. Frequently seized items included European eels, timber, herbal medicines, live birds, reptiles, and corals. Eighty-eight new species were seized for the first time, including poison dart frogs and tarantulas, while birds represented the largest number of seized species, totaling 196 distinct taxa [TRAFFIC 2023].

In Poland, between 2008 and 2013, the Customs Service conducted numerous seizures of biodiversity resources protected under CITES, demonstrating the agency's critical role in combating animal smuggling [Chackiewicz and Kostecka 2017]. Illegal wildlife trade was one of the main challenges for the Polish Customs Service during this period, as evidenced by seizures of turtles, corals, and ivory products. The scale of smuggling was partly due to Poland’s location along transit routes between Asia, Europe, and Africa, making the country a key transit point.

According to WWF Poland [Cebula and Chmielewski 2022], between 2015 and 2020, Polish customs authorities carried out 606 seizures related to illegal wildlife trade, confiscating a total of 426,248 specimens. The highest number of seizures occurred in 2019, with 368,631 specimens confiscated, a record figure for the analyzed period.

Illegal wildlife trade poses a major threat to biodiversity, contributing to the extinction of numerous species and destabilizing ecosystems [Rosen and Smith 2010]. It is recognized as a significant driver of rapid species decline, particularly in tropical regions, where entire populations of animals such as tigers and rhinoceroses are disappearing. This trade also disrupts ecosystem structure and function, leading to potentially irreversible environmental changes [Janiszewska 2019].

Smugglers employ a variety of methods to circumvent CITES regulations, including falsifying shipping documents, concealing animals in cargo, and exploiting new transport routes [Listos et al. 2016]. Animals and animal products are often concealed in furniture, food, or clothing, complicating their detection during inspections. In recent years, transport routes have shifted toward countries with weaker enforcement infrastructure, bypassing states with stringent customs controls.

Analysis of selected smuggling cases

A notable example of successful customs intervention in Poland is the foiled smuggling of protected species such as parrots, snakes, and turtles [Chackiewicz and Kostecka 2017]. These operations relied on advanced technologies, including X-ray scanners and thermal monitoring devices, enabling the detection of hidden animals. Detailed baggage inspections and transport documentation analysis allowed officers to identify discrepancies and suspicious shipments. In some cases, international cooperation and informant reports were crucial.

From a criminological perspective, illegal wildlife trade encompasses a heterogeneous spectrum of actors and organizational structures. At the lower end, it includes opportunistic offenders such as tourists or individual collectors attempting to smuggle protected specimens for personal use or small-scale profit. At the higher end, the trade is increasingly associated with organized transnational criminal networks characterized by hierarchical structures, role specialization, and cross-border logistics. These networks exploit regulatory discrepancies, weak enforcement capacity, and low perceived risk of punishment in comparison to other forms of transnational crime [UNODC 2020, Europol 2023, UNODC 2024].

Importantly, seizure-based statistics reflect only a fraction of the actual scale of wildlife crime, a phenomenon commonly referred to as the "crime iceberg effect." A substantial proportion of illegal wildlife trade remains undetected due to limited inspection resources, selective controls, corruption risks, and the adaptive strategies of traffickers. Consequently, confiscation data should be interpreted primarily as indicators of enforcement activity and trafficking patterns rather than reliable estimates of the true magnitude of the phenomenon [UNODC 2020, Stringham et al. 2021, UNODC 2024].

However, Melaniuk [2019] highlights challenges faced by customs officers, including limited equipment, a shortage of specialized personnel, and sophisticated smuggling methods, which often prevent the detection of illegal shipments. Unsuccessful interventions include cases in which smugglers falsified animal origin documents or used transit routes

through countries with minimal border control. Limited information sharing between states and insufficient penalties also undermine enforcement effectiveness.

The smuggling problem extends beyond Poland. In Slovenia, numerous cases of exotic animal smuggling have been reported, indicating a rising interest in the European market as a destination or transit hub. Dvojmoč and Kubale [2023] note that Slovenia's location in Central Europe has made it a key transit point. Smuggled species included chameleons, parrots, and snakes, transported in extremely inhumane conditions. The growing European demand for exotic pets, status symbols, and the difficulty of prosecuting organized criminal networks further drives the trade.

Global actions supporting CITES implementation

Non-governmental organizations play a crucial role in combating illegal wildlife trade by supporting enforcement, education, and policy development. TRAFFIC and WWF collaborate with CITES member states to enhance enforcement and promote public education [Pływaczewski 2011]. Kapel and Kala [2016] describe these organizations as providing essential support through officer training, species identification tools, and databases on illegal trade. Educational campaigns raise public awareness of the negative impacts of wildlife crime, including biodiversity loss and animal cruelty. Such initiatives promote regulatory harmonization and improved international cooperation.

Modern technologies, such as social media analytics, are increasingly used to detect trends and patterns in illegal wildlife trade. Monitoring platforms like Twitter and Facebook allows authorities to identify coded sales advertisements, smuggling networks, and changes in species demand [Shan et al. 2022]. Tomańska et al. [2023] emphasize that social campaigns and school-based education increase public awareness, reduce demand for illegal products, and strengthen support for law enforcement.

Main smuggling routes

The smuggling routes and transport methods described in the literature constitute key elements of the modus operandi used in illegal wildlife trade and should be interpreted together with the case analyses presented above.

Literature and EU reports indicate that smugglers most frequently use air transport, which enables rapid and relatively discreet movement of specimens [Chackiewicz and Kostecka 2017]. Animals may be hidden in cargo compartments thus complicating identification. In regions with less stringent border control, land routes are preferred. These often traverse rural areas or border crossings with minimal supervision [Listos et al. 2016].

Water transport is widely used for smuggling large consignments, such as timber, corals, and marine products, allowing greater quantities to be moved per trip. Cargo ships can more easily evade inspections, particularly in ports with limited customs control, highlighting the global significance of maritime smuggling routes [Rosen and Smith 2010].

Identifying the most frequently trafficked species

The most commonly trafficked animal groups in Europe include turtles, parrots, and snakes, prized by collectors and black market traders [Listos et al. 2016]. Exotic species are valued as pets, hunting trophies, or sources of traditional medicine [Rosen and Smith

2010]. Smuggled animals or their parts (bones, horns, shells, skins) are often used in Traditional Chinese or Asian Medicine for purported medicinal effects. Products such as ivory or pangolin scales contribute significantly to illegal trade, threatening biodiversity [Rosen and Smith 2010].

The illegal trade in rhinoceros horn represents one of the most severe examples of wildlife exploitation. Its exceptionally high market value, combined with persistent demand in traditional medicine and luxury markets, drives intensive poaching and rapid population declines. Trade routes linking source countries with markets in Asia and Europe further increase the profitability of this activity. At the same time, relatively low detection rates and limited enforcement capacity reduce the deterrent effect of existing legal measures, making the control of rhinoceros horn trafficking a key challenge for effective species conservation [Tomańska et al. 2023, Europol 2023].

SUMMARY

The literature confirms that CITES is a critical tool in curbing illegal trade in endangered animal species however, its effectiveness largely depends on the quality of national implementation and enforcement. Successful customs interventions and the activities of non-governmental organizations demonstrate the potential of existing mechanisms, but they also reveal structural limitations. Challenges such as limited resources, the growing sophistication of smuggling methods, and uneven levels of international cooperation highlight the need for stronger legislative frameworks, improved officer training, and more effective use of modern monitoring technologies.

Consequently, the long-term reduction of illegal wildlife trade requires integrated enforcement strategies, enhanced information exchange, and sustained international collaboration, supported by public education and coordinated institutional action.

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