Tracing seven decades of Chinese wildlife legislation from 1950 to the COVID-19 pandemic era

Keywords: ecological civilization, environmental law, human interest, Kingdon Model, policy window, wildlife governance

Abstract

Due to its abundant biodiversity and active wildlife trade, China's wildlife governance has been in the spotlight, especially following the legislative reforms introduced after the COVID-19 pandemic, hailed as "a turning point for China's wildlife protection". Using Kingdon's framework, we analysed China's evolution of wildlife legislation from 1949 to 2023, focusing on species protected under the Wildlife Protection Law, encompassing mammals, amphibians, reptiles, birds, fish and insects. We examined the key drivers behind critical changes in China's approach to wildlife governance, the nature of these legislative changes, and their subsequent impacts.

The analysis identifies and describes three historical phases that reflect gradual but key shifts in wildlife governance, notably from one focused on wildlife utilisation and increasingly towards conservation. The recent post-COVID changes, albeit driven by public health concerns, significantly pivot towards stricter conservation practices, aligning with China's philosophical shift towards "ecological civilisation." These shifts uncovered how the key drivers shaped the relevant policy and legislation.

This historical analysis offers conservationists and the broader conservation movement a valuable perspective. We suggest these individuals or groups explore the underlying factors and patterns that have influenced the evolution of conservation policy and legislation from a macro-historical scale. Such an understanding can enhance their confidence in lobbying the public and policymakers to support specific conservation proposals, strengthening the likelihood that their proposals can be accepted and translated into actionable policies.

1. Introduction

China hosts globally unique biodiversity (Wang et al., 2020c), and a range of cultural traditions of wildlife consumption associated with domestic and international, legal and illegal wildlife trade (Jiao et al., 2021; Huang et al., 2021). The country has faced both criticism for inadequate wildlife protection (White, 2020; Huang et al., 2021; Lin, 2021) and praise for a number of recent legal reforms (Lin, 2021). The outbreak of the COVID-19 coronavirus pandemic, suspected to be linked to wildlife trade, has put China's wildlife policies under global scrutiny (Huang et al., 2021; White, 2020). The Chinese government's swift legal action to enhance wildlife protection and prevent zoonotic diseases has been hailed as a (potentially) significant turning point in its conservation efforts (Huang et al., 2021; You, 2020).

This paper seeks to understand how post-COVID legislative changes fit within longer-term trends in the development of wildlife conservation law in China. Understanding the changing trends, and tensions between wildlife conservation, utilisation and public health goals can help to better understand the drivers behind policy development. This, in turn, can help inform future reforms in wildlife legislation – both within and beyond China.

We used a doctrinal analysis of Chinese wildlife legislation from 1949 to mid-2023, focused on legislation governing the conservation and use of wildlife protected under Wildlife Protection Law (WPL), and a timeline of key legislative developments and significant external events (e.g., zoonotic events). We identified three phases in the development of Chinese wildlife conservation law, and employed Kingdon's (2014) multiple streams model (MSM) of "policy windows" to help understand these transitions – including whether recent (COVID-era) developments are (likely to be) as significant as suggested in the literature (e.g., Huang et al., 2021; You, 2020). Before expounding our methods and introducing our findings, we first outline the context of COVID and China's intricate pathway to wildlife conservation in more detail.

2. Evolving Strategies in Chinese Wildlife Conservation

2.1 Pandemic Pivot: COVID-19's Impact on Wildlife Legislation

Following the COVID-19 pandemic, wildlife governance has faced calls for deep reforms to reduce the risks of future zoonoses, ranging from bans on the consumption of wild meat (Wang, 2020) to proposals for new global agencies to help regulate zoonotic threats (McCarthy and Gott, 2020). This is exemplified by China, which has undergone very significant, recent changes to its legislation (Huang et al., 2021). Characteristics of many post-COVID legislative changes suggest a fundamental shift – from relatively lax restrictions on trade and consumption of wildlife to a much more prohibitive approach driven by public health concerns (Wang et al., 2020a, Huang et al., 2021) that can have additional benefits for conservation (Koh et al., 2021). Often framed as a choice between using versus protecting wildlife (e.g., Ge Gabriel, 2014; Li, 2007), wildlife legislation in China, as in much of the world, are both complex and nuanced (Xiao and Li, 2021).

In the immediate aftermath of the COVID-19 outbreak, China's legislation governing wildlife underwent unprecedented changes (Huang et al., 2021). Examples include a complete prohibition on the edible use of all terrestrial wild animals, a temporary ban on wildlife trade for the duration of the epidemic, a thorough update and expansion of the protected species lists, and a new approach to classifying certain types of livestock. Meanwhile, countless wildlife farms were forced to close by law, seriously impacting the livelihoods of nearly 14 million people working in this industry (Ren, 2020). These changes reflect an apparent radical shift in China's approach to wildlife governance, at least in relation to edible uses of wildlife, hailed as "a turning point for China's wildlife protection" (Huang et al., 2021). Such dramatic shifts are particularly notable for China, a country that has historically prioritised traditional and economic wildlife utilisation (Zhu and Zhu, 2020). That said, some of these post-COVID changes were temporary and have already expired or been revised, leaving the legacy of COVID-19 on Chinese wildlife conservation law unclear.

2.2 Legacy of the Past: Historical Utilisation and Conservation

However, these changes do not stand in isolation; they need to be understood in the contexts of historical practices, shifting trends in consumer demands, rural employment, international agreements and shifting conservation policies. Wildlife harvest, trade and use are deeply embedded in Chinese history and culture (Zhu and Zhu, 2020). For example, food therapy, an important part of traditional Chinese medicine (TCM) culture, was believed by most Chinese people and became a deeply entrenched part of their thought. This has driven the demand for wild animals for human consumption for a long period of time. Historically, the wet market in China can be traced back millennia (Zhu and Zhu, 2020). In a 2004 survey conducted in three wildlife-rich provinces in southwest China (Qinghai, Guangxi and Yunnan), 60% of

respondents indicated that they had consumed wildlife in the past two years (Zhang et al., 2008). Besides, *Shen Nong Ben Cao Jing*, the first Materia Medica book in China (Nugent-Head, 2014), created over two thousand years ago, contains 65 medicinal animals (Zhang, 2013). One thousand years later, during the Ming Dynasty, another similarly influential work, *Compendium of Materia Medica*, was published, in which 444 medicines containing animal ingredients were listed (Li, 2001). Hence, much of the world's illegal wildlife trade (IWT) is driven by China's demand for delicacies and TCM (Mallapaty, 2020), which especially impacts its neighbours as source countries (Huang et al., 2021). Apart from these traditions of edible or medicinal utilisation, there is also demand for wildlife in other fields, like making the Erhu (a traditional musical instrument) from python skin (Jiang et al., 2013), and ivory carving, which was added to China's National List of Intangible Cultural Heritage in 2006, further fuelling importation of ivory from Africa (Permata and Wahyuni, 2020).

2.3 Balancing Act: Economic Needs vs. Ecological Values

Chinese wildlife legislation has thus historically followed the resource-oriented notion (Jiang and Aron, 2022). Relevant legal conservation has even been primarily motivated by the utilisation value of wildlife as a resource (Huang et al., 2021; Zhu and Zhu, 2020). There are various and complicated legal categories of wildlife in China (see Tian et al., 2023), covering not only threatened species but also species with "important ecological, scientific or social value" (termed "*Sanyou* animals") that are nationally protected under the WPL, the main legislation governing wildlife protection in China. Some violations of the WPL are punishable under criminal law, and China has some of the harshest penalties for wildlife crimes in the world (Hu et al., 2022). Many other species are protected at provincial and local government levels (Article 10, WPL), and some iconic animals, most notably pandas, receive specific protections (Songster, 2018).

Meanwhile, China has had an expanding protected area network since 1965, now covering 85% of wildlife under special state protection (Yin, 2013; NFGA NPA, 2020). It has also become an active contributor to a range of international environmental conventions, including CITES and CBD (Qin, 2020). China's national adoption of "ecological civilisation", a concept that seeks to define a balanced relationship between humans and nature (Ferguson, 2019), is further shaping shifts in the legal framework, moving from an economic focus on wildlife to recognising its inherent ecological value.

These protections have become all the more important as China has experienced tremendous increases in consumption power and online trade that have increased access to wildlife, including expensive and scarce items as symbols for elite status and wealth (Wong, 2019; Zhang and Yin, 2014). These drivers are resulting in growing market demand for a range of domestic and international wildlife products in China (Zhang and Yin, 2014; Zhu and Zhu, 2020).

To meet the demand of the wildlife markets and protect wild populations of endangered species, Chinese legislation has strongly supported captive breeding (also known in China as artificial breeding) of wild animals (Liu et al., 2016). China has the most extensive wildlife domestication operation in the world, an important industry and poverty reduction effort (Li, 2007; Rizzolo et al., 2023). Nevertheless, China faces ongoing consumer demand and preferences for wild-sourced materials (Liu et al., 2016).

These factors make for a very complex legislative environment, underpinned by tensions between the competing – and often conflicting – aims of conservation and utilisation of

wildlife, and subject to changes over time (Tian et al. 2023). To explore how China's policy making has changed over time and what the shifts behind these changes mean for wildlife conservation, we reviewed 147 pieces of legislation governing terrestrial wild animals in the 74 years since the founding of New China in 1949.

3. Methods

3.1 Data collection

We accessed a complete list of national legislation via the Government of China's centralised database (Chinese version: www.npc.gov.cn; in English https://hk.lexiscn.com/) to identify legislation governing terrestrial vertebrate wildlife in China from 1949 to mid-2023. We operationalised a set of inclusion criteria/parameters (Table 1). Only national-level legislation that met these three criteria were included.

Table 1. Inclusion criteria for collected legislation governing wildlife

Criteria	Interpretation
Key governance topics	wildlife conservation, wildlife utilisation, wildlife (criminal) offences, and wildlife-related public health and animal health concerns
Species involved	Terrestrial and aquatic wildlife that are protected under special state protection; terrestrial wildlife which is of important ecological, scientific, or social value
Keywords	wildlife 野生动物, animals 动物, biodiversity 生物多样性, zoonotic diseases 人畜共患疾病, endangered species 濒危物种, zoo 动物园, livestock 牲畜, ecological civilisation 生态文明

We only included legislation that actively regulated wildlife resources, such as establishing or changing rules of use and conservation, while legislation that mentioned key terms (e.g., "wildlife") but without applying specific rules or guidance was excluded (e.g. if the mention of wildlife was simply a reference to another piece of legislation, or a notice calling for public feedback). Additionally, to keep our sample size manageable, we focused on legislation governing species protected under the WPL (see Table 1). We excluded any legislation that solely applies to aquatic and marine species that fall outside the scope of the WPL's protection, as the former are governed by Fisheries Law, and legislation concerning the latter typically focus more on marine technology than on conservation. To avoid redundancy, we did not collect a series of routine official notices for the protection of seasonal migratory birds and the control of wildlife epidemics, which began in 2006 and are issued annually. As a result, there are taxonomic biases in the species selection (e.g., taxa not covered under the WPL), although we believe the trends described remain generally representative of trends of China's broader wildlife policy approach. Finally, we also excluded legislation only governing single species but included several pieces of legislation regulating typical products: ivory, tiger bones, and rhino horns, the three kinds of wildlife products that have high market demand in China (McConkie, 2021).

We focused on national-level legislation (Table 2) and excluded measures that applied only to specific and limited geographical areas. In addition, we also included Party Regulations (党内规章) of the Chinese Communist Party (CCP), which are independent of national legislation but play an essential role in China's rule of law (Wei, 2018). (Appendix 1 provides an overview of China's legislative system).

Table 2. Hierarchy of national legislation included (following Otto and Li, 2000)

Hierarchy	Types of Legislation
Primary legislation	Constitution, Laws, Decisions on Legal Issues and Significant Issues (有关法律问题和重大问题的决定), Legislative interpretation (立法解释), Judicial interpretation (司法解释, including "Documents of a Judicial Interpretation Nature" 司法解释性质文件 & "Working Documents of the Supreme People's Court and the Supreme People's Procuratorate" 两高工作文件)
Secondary legislation	Administrative regulations (行政法规), Normative documents (规范性文件)
Tertiary legislation	Departmental rules (部门规章), Departmental normative documents (部门规范性文件), Departmental working documents (部门工作文件)

Applying these criteria, we identified 147 pieces of legislation for inclusion in our analysis from the total of 2,082 pieces of legislation initially collected (for the full list of included legislation, see Appendix 2). We included amendments to (and expiration of) existing laws, as well as new pieces of legislation.

To ensure understanding and avoid translation errors, legislation was collected and checked both from official Chinese government websites (where Chinese versions of the legislation are available) and from the LexisNexis and the PKULAW legal databases (the latter providing both Chinese and English versions of legislation). (The lead author, xx, is a native Mandarin Chinese speaker.)

3.2 Data analysis and approach

Our analysis of the legislative documents occurred in two stages. First, we adopted a doctrinal approach focused on the content of the legal texts to identify their key legislative objectives, enabling us to create a timeline of key legislation (Fig. 2). We then applied a more socio-legal approach to understand the connections between legislation and the external social factors (Mohamed, 2016). We utilised Kingdon's Multiple Streams Model (MSM) as an analytical framework to try to explain the broad changes in policy identified in the first stage of analysis, with a particular focus on identifying and describing "policy windows" (Kingdon, 2014).

Kingdon's MSM posits that significant policy changes occur not (or not just) because of an accumulation of evidence convincing policymakers that such a change is necessary, as an idealistic "evidence-based policy" model would suggest (Sanderson, 2003; De Marchi et al., 2016). Policy processes are instead viewed as much more chaotic, with many more factors than evidence contributing – including economic, ideological, political and pragmatic concerns. Legislative changes are thus best understood as occurring when a broader range of conditions ("streams") come into alignment. The MSM identifies three main streams that shape policymaking (including legislative changes): the political stream, the policy stream, and the problem stream (Kingdon, 2014), which are not always independent of each other. When they show up together in a brief "window of opportunity", only then does a significant change occur (Cairney and Jones, 2016) (i.e., when the "Policy Window" opens). Given the

recent context and boom in Chinese wildlife legislation, Kingdon's MSM seemed to be a particularly appropriate analytical tool.

In legal research, the doctrinal method can be criticised for being divorced from practical reality, while the socio-legal approach has been challenged for lack of attention to legal texts. In combining the two methods in this research, we hope to overcome some of the weaknesses inherent in using either approach on its own (Mohamed, 2016) to provide both a description and explanation of the changing trends in Chinese wildlife governance at the national legislative level.

4. Results

The three decades following 1950 saw a small number of new effective pieces of wildlife legislation, marked by considerable increases over the following decades (Fig. 1). Notably, the 3.5-year period following 2020, coinciding with the COVID-19 pandemic, experienced a boom in new legislation, comparable in volume to entire previous decades.

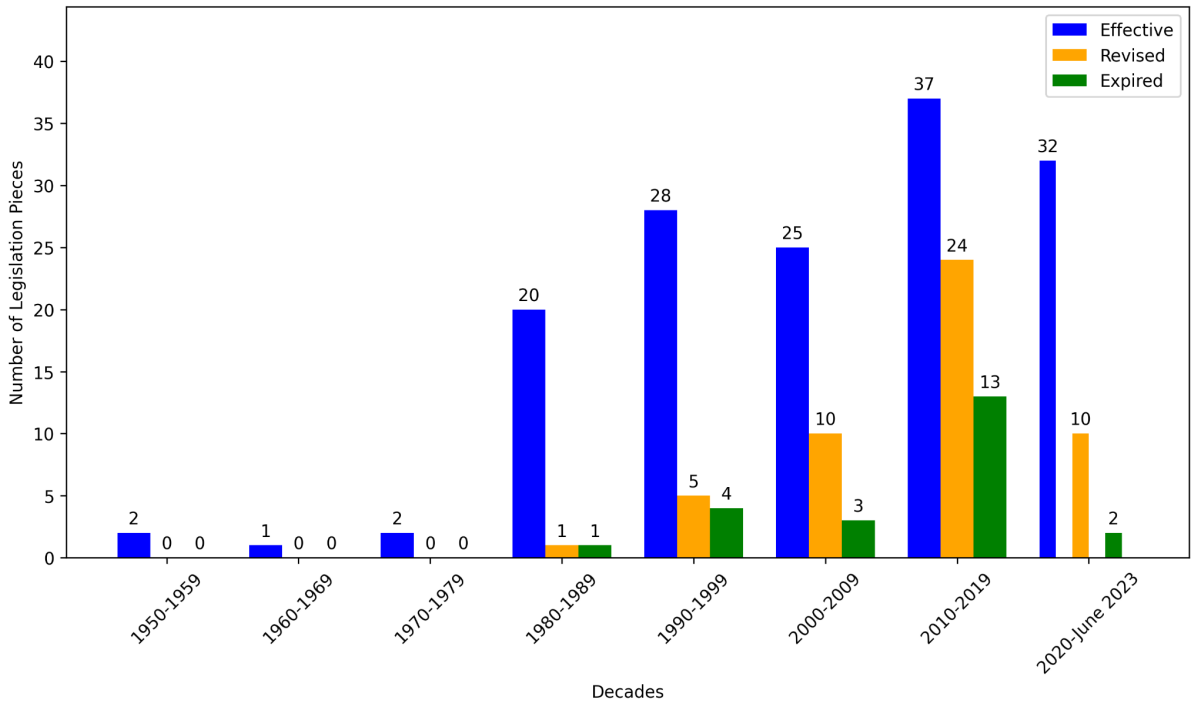

Figure 1 Number of pieces of wildlife legislation that became effective, were revised, or expired in each decade since 1950. The final thinner bars reflect only a 3.5-year period from 2020.
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We identified three phases in the legal development, which were separated by two landmark events: the introduction of ecological civilisation policies in 2007 and the outbreak of the COVID-19 epidemic in 2019 (Fig. 2). This is reflected not only in the volume of legislation around these two "landmark events", but primarily through identifying changes in legal terms and stated objectives of new legislation and legislative revisions during these periods (discussed below). In particular, the period shows shifts in approaches to the balancing of wildlife "conservation" and "utilisation", with a gradual shift away from prioritising the latter and towards prioritising the former.

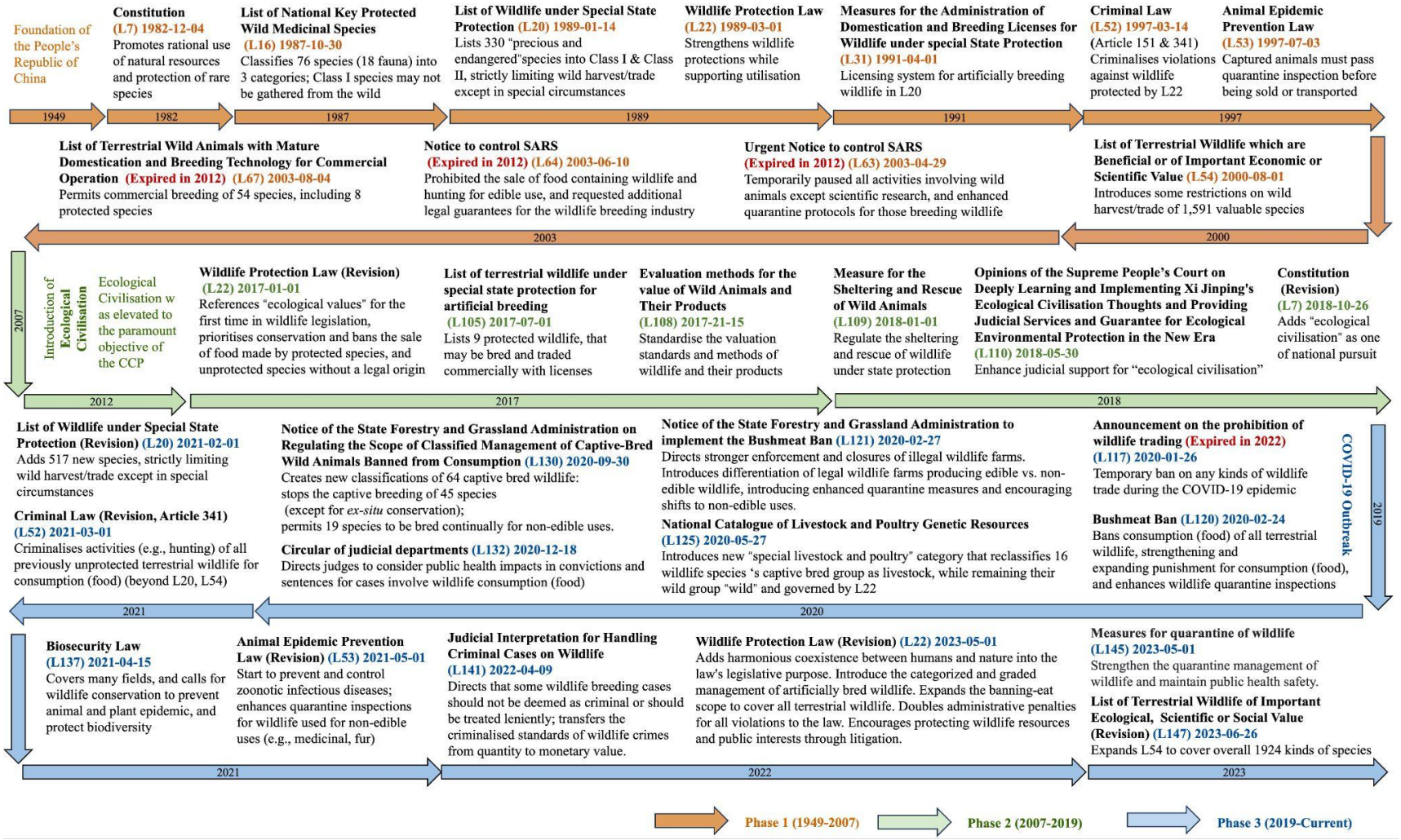

Figure 2 Timeline of key Chinese wildlife legislation (with effective date), highlighting three key historical phases that reflect shifts in governance approach. (Numbers in parentheses refer to each piece of legislation, which are referenced in the text) (Indication: color should be used in print)

4.1 Phase 1 (1949-2007): Governance driven by scarcity of wildlife resources

A close bond between conservation and utilisation characterised the first six decades. To put it briefly, the main feature of this initial phase was conservation aimed at ensuring the continued utilisation of wildlife. This was driven by the scarcity of endangered wildlife and resolved by bolstering protections for wild populations and promoting the development of captive breeding programs.

Conservation has been part of China's policy since the early years of the CCP regime, with initial legislation prohibiting the harvesting of rare creatures emerging in 1950 (Appendix 2 L1) but encouraging the hunting of other wildlife serving the market in 1959 (Appendix 2 L2). Yet, linked to the country's strong traditions of wildlife use and the focus on post-war economic recovery, the initial emphasis was on using wildlife for economic and cultural tradition purposes, rather than on conservation for its own sake. While the governance of wildlife trade began tightening in the 1980s, it wasn't until the WPL (Fig. 2 L22) was enacted in 1989, and the "Wildlife under Special State Protection" list (Fig. 2 L20) was introduced, that wildlife management became more systematic and classified. Established in 1989, this list only elevated the protection status of two species from Class II to Class I over more than three decades—the musk deer in 2003 and pangolins in 2020—until it underwent significant updates in 2021.

Throughout this phase, most legislation focused on the utilisation of wildlife: policy aimed to protect animals to enable their use for products and trade or to prevent issues arising from the scarcity of species for exploitation. Laws often protected wildlife for their economic value in international trade, like exchanging wildlife products for foreign currency (Appendix 2 L3) and safeguarding the quarantine of such products to support foreign trade (Appendix 2 L6, 9, 35, 51). Even the 1989 WPL, while conservation-oriented, included rational use of wildlife resources as a goal. Additionally, there were laws from 1987 that protected wild animals specifically for medicinal resources (Appendix 2 L16, 17), with their medicinal importance also tied to economic value, including laws on the export of medicines made from animal ingredients (Appendix 2 L24, 27). The establishment of the list of "*Sanyou* animals" in 2000 (Fig. 2 L54) was another example of prioritising utilisation, initially selecting animals based on their "beneficial, economic, or scientific values." Although the valuation criteria were updated literally in the 2016 WPL to emphasise "important ecological, scientific, and social values," a thorough update of this list, following these new criteria, was not conducted until 2023.

During this time, the core WPL legislation also encouraged and supported wildlife breeding, to ensure supplies for TCM and other uses. Accordingly, a new licensing system for wildlife farms was also established in 1991(Fig. 2 L31). Legislative support for these industries was reaffirmed swiftly after the 2003 SARS outbreak, a severe zoonotic disease first identified in China, affected 29 countries and infected 8,098 people, with 774 recorded deaths (CDC, 2005). This led to a temporary ban on wildlife trade, exempting the use for scientific research, which was lifted once the SARS threat subsided (Fig. 2 L63). This was replaced after three months by regulations promoting the breeding and domestication of wildlife, seen at the time as a way to balance wildlife conservation and use (Lv, 2003). For example, a list of 54 terrestrial wildlife species was declared suitable for commercial breeding (Fig. 2 L67), including eight species under special state protection (even the civet cat *Paguma larvata*, a potential SARS carrier, also legally categorised as a *Sanyou* animal for its economic value).

4.2 Phase 2 (2007-2019): Conservation increasingly driven by the ecological value of wildlife.

This 12-year phase is heavily characterised by changes to wildlife legislation, including many revisions and new legislation focused on enhanced conservation. Legal use of wildlife continued to be robustly supported during this phase, but it became increasingly regulated and for a smaller number of species.

It is heavily informed by China's 2007 introduction of the ecological civilisation concept, which was regarded as an overarching objective of the CCP in 2012 (Goron, 2018). The Supreme People's Court also reinforced the commitment to ecological civilisation in 2018 (Fig. 2 L110), which was then incorporated into the Constitution as a national pursuit. This concept has also been reflected in many legislative and official documents concerning wildlife and biodiversity.

The 2016 amendment to the WPL introduced the ecological civilisation concept, which marked a pivotal shift in wildlife governance. It shifted away from a heavy emphasis on wildlife utilisation and breeding, specifically recognising the "ecological value" of wildlife and underscoring the importance of biodiversity and ecological balance. It established the principle of prioritising conservation over utilisation in wildlife governance. This was reflected in changes to the ban on consumption of some wildlife, notably endangered species and other species without legal origin. The amended WPL also highlighted the importance of education in wildlife protection to increase public awareness about conservation.

In parallel, this period saw strengthened wildlife enforcement legislation (although Criminal Law amendments in 2011 eliminated the death penalty for wildlife smuggling, which could potentially be considered a softening of the enforcement stance). Two Judicial Interpretations in 2014 (Appendix 2 L93, 94) provided clearer definitions of wildlife crimes to facilitate wildlife prosecutions. Other legislation included a ban on ivory trade in 2016 (Appendix 2 L104), and guidelines for wildlife rescue operations became effective in 2018 (Appendix 2 L109). In 2019, two legal documents sought to enhance wildlife conservation and tackle the unlawful use of wildlife through increased interdepartmental collaboration, improved market oversight, and heightened public awareness (Appendix 2 L112, 113).

Wildlife breeding and use remained during this period but in more restricted terms. The amended WPL referenced "regulated utilisation", under a more specific set of circumstances (scientific research, captive breeding, public display, exhibition, and cultural heritage conservation), and focused on species with established and stable breeding techniques. For example, though the existing list of 54 wildlife species subject to commercial breeding was allowed to expire in 2012, in 2017, another list of 9 species under special state protection was brought into breeding to satisfy commercial demand (Fig. 2 L105). Additionally, legislation during this period actively supported TCM industry growth. A catalogue in 2014 encouraged the sustainable development of wildlife medicinal resources in disadvantaged areas such as Guizhou to aid in poverty alleviation (Appendix 2 L95). Moreover, the new Chinese Pharmacopeia enacted in 2015 (Appendix 2 L100) included wild animals, some endangered, as ingredients. Additionally, the 2016 strategic plan for TCM (Appendix 2 L101) highlighted the industry's push into international markets. However, a 2018 notice planning to reopen the Chinese market for trade in rhino and tiger products under strict regulation (Appendix 2 L111) was never operationalised (WWF, 2018).

4.3 Phase 3 (2019-Present): Conservation driven by public health concerns

The third phase is characterised by a boom of 32 pieces of new and revised wildlife legislation between 2020 and mid-2023, immediately following the COVID-19 pandemic (Fig. 1), including significant amendments to the WPL. This period is characterised by legislation focused on protecting public health through measures to decrease wildlife use and enhance wildlife conservation.

As the earliest COVID-19 cases were identified at the Huanan Seafood Wholesale Market in Wuhan, China, although the exact source of the virus remains unconfirmed (Guo et al., 2020; Harapan et al., 2020), the outbreak was usually linked to China's wildlife trade (Aguirre et al., 2020), particularly bushmeat consumption (Bezerra-Santos et al., 2021). Consequently, the pandemic prompted a re-evaluation of human-wildlife interactions to prevent future zoonotic diseases.

Notably, legislative responses involved far more significant changes to China's wildlife governance than the 2003 SARS zoonotic outbreak (Aguirre et al., 2020; Wu et al., 2020). The COVID-19 crisis led to changes in primary legislation, reflecting the seriousness of the legislative response, notably a comprehensive Bushmeat Ban on all terrestrial wild animals (Fig. 2 L120). There was also an immediate temporary halt in wildlife trade (Fig. 2 L117; 2020, expired in June 2022). In contrast, SARS era revisions involved a temporary ban implemented via tertiary legislation (Evans, 2020; Wang, 2020). Policies during the SARS era were relatively lax regarding wildlife farming. In contrast, COVID-era policies, notably the 2020 Notice implementing the Bushmeat Ban (Fig. 2 L121), introduced tougher penalties for illegal farms and distinguished between breeding animals for consumption and those for non-edible purposes (such as fur and medicine). Breeding for wildlife consumption was completely banned, while the production of non-edible species was allowed to continue under stricter quarantine measures. Additionally, another Notice in 2020 (Fig. 2 L130) reclassified the management of 64 species previously farmed for consumption; only 19 of these species are now legally permitted to be bred for non-edible wildlife products. Furthermore, a newly introduced Catalogue in 2020 (Fig. 2 L125) identified 16 terrestrial wildlife species as "special livestock and poultry," 12 of which are the only species authorised for farming for human consumption.

Substantial revisions to the WPL came into force in May 2023. These focused on improving public health protections by permanently incorporating the bushmeat ban, enhancing wildlife habitat protection, refining the hunting and trading management, and introducing public interest litigation to combat wildlife-related offences. Amidst these strengthened regulations, the WPL also saw some softening of regulations by cancelling the licensing requirement on artificially bred *Sanyou* animals (Cui, 2023).

Post-SARS legislation did not result in significant legislative reforms. However, following COVID-19, criminal law changes intensified the crackdown on wildlife consumption. The pandemic also expedited the introduction of the Biosecurity Law (Fig.2 L137) aimed at preventing animal and plant diseases. Additionally, it led to updates in the Epidemic Prevention Law, which now includes quarantine inspections for captive-bred species used for non-edible purposes. Meanwhile, in 2021, the list of Wildlife under Special State Protection had its first major revision in almost 30 years, adding 517 species and increasing the total by 53%. This expansion included upgrading 187 *Sanyou* animals to receive stricter legal protections. In this updated version, 63 species are marked as "limited to wild populations," allowing for their artificial breeding (only 4 are terrestrial species, categorised as "special

livestock"). In 2023, the list of *Sanyou* animals also saw its first major update in over 20 years, expanding to include a total of 1,924 species, with 680 new additions.

5. Understanding the changes through the Multiple Streams Model framework

We used Kingdon's Multiple Streams Model (MSM) model to understand the changes in legislative phases that led to Phase 2 and Phase 3. We identified the introduction of the ecological civilisation concept as a *political window,* and the COVID-19 pandemic as a *problem window*.

5.1 Ecological Civilisation creates a *political window* for change

The introduction of the ecological civilisation concept that characterised Phase 2 reflected a unique convergence of *problem* and *policy* streams at the highest levels of the Chinese government, and can be seen as a *political window* that allowed for changes in wildlife policy making. Since the economic "reform and opening up" 1978, China accelerated its transformation from an agricultural to an industrial civilisation (Pan, 2019). Leveraging its vast natural resources and extensive labour force, China emerged as the "factory of the world", a role that boosted its industrial productivity and economic growth but also hastened an ecological crisis (Pan, 2018).

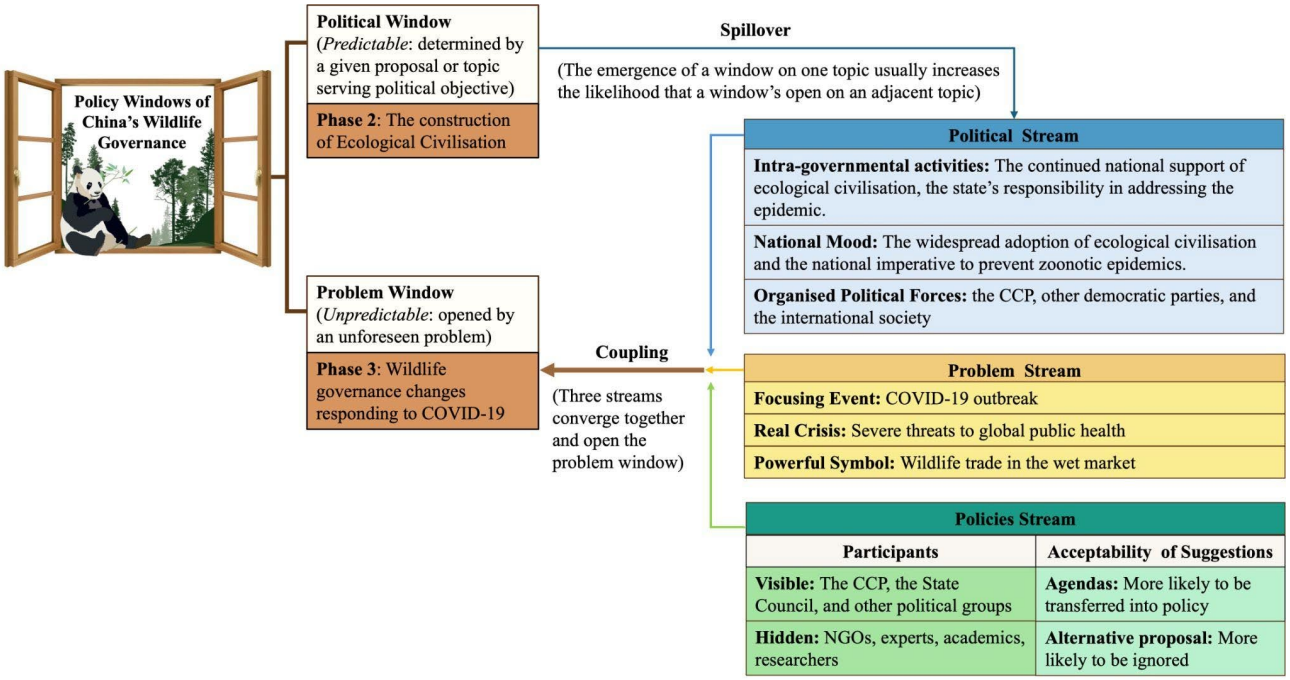

Figure 3 Kingdon's Multiple Streams Model (MSM) of policymaking, applied to changes in China's wildlife governance.
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The concept of ecological civilisation reflected an important change in that policy narrative. Coined by a former Soviet scientist in 1984 (Gare, 2009), ecological civilisation was introduced to Chinese political discourse in 2007 as an innovative approach to solving environmental problems (Ferguson, 2019). It became one of the priority objectives of the CCP in 2012 and then was central to President Xi Jinping's ideology of "Socialism with Chinese Characteristics for a New Era" (Goron, 2018). The concept was subsequently integrated into several environmental laws, including the WPL in 2016 and the Chinese Constitution in 2018 (Goron, 2018; Wei et al., 2021; see Phase 2). Such robust political

guarantees are why this factor can be considered a driving *political stream*. Moreover, it was closely aligned with the challenge of ecological crisis, which served as an influential *problem stream*. Policy solutions are proposed, with those adopted by the government forming the *policy stream*.

Even in the context of environmental policies that are principally and ultimately driven by human interests – the Chinese perspective retains a holistic perspective that views humans and nature as linked (i.e. wholistic, but always from a human vantage). This contrasts with the Western environmentalism paradigm that often delineates a separation between nature and humans, or an explicit distinction between eco- and anthropocentric motivations and approaches (Zhu, 2023). At the heart of ecological civilisation is the definition of a new relationship between humans and nature (Ferguson, 2019; Weins et al., 2022), which is also known as a fresh, natural outlook based on Eastern wisdom, called the "unity of man and nature" (Zhang, 2021). Therefore, this ideology strongly overlaps with much older Chinese philosophical thought, such as the Taoist objection to "conquering nature" (Feng, 2015) (i.e., "obligate to nature") and the Confucianist emphasis on "man's moral obligation to nature" (Liu, 2018). With the idea of the unity of nature and humanity embedded in Chinese philosophy and culture for millennia, the concept of ecological civilisation has been readily accepted by the Chinese people. This, combined with the *organised political forces* of the CCP (Xiao and Zhao, 2017), has made ecological civilisation widespread in China, influencing people's perceptions of environmental protection (Huang and Westman, 2021; Wang et al., 2020b).

In the context of wildlife governance, these political and problem streams aligned with a proposed solution, a *policy stream* that involved changes in Chinese legislation to prioritise species conservation. The resulting *policy window* saw significant amendments to the 2016 WPL, notably prioritising species conservation over utilisation as described in Phase 2. This also established a strong *national mood* towards eco-conservation, lasting effects in the opening of the *problem window* that was driven by COVID-19 (Fig. 3).

5.2 A COVID-19 *problem window* accelerates shifts in wildlife governance

An unpredictable *problem window* drove phase 3 in the wildlife governance timeline, that was the COVID-19 pandemic (Fig. 3). It was a *real crisis*, with enormous economic and public health impacts across the globe (Laborde et al. 2020) and, thus, became a *focusing event* drawing global attention to the problem between public health and the environment, especially wildlife trade. Wildlife trade in China, specifically the wet market, became a *powerful symbol* that raised worldwide discussion (Roe et al., 2020), given the potential origins of the virus. As such, the pandemic became an effective *problem stream*, sparking discussions and reforms to address the conflict between wildlife management and zoonosis prevention.

At the same time, the *political window* of ecological civilisation remained active. And given the resonance between the enhanced eco-conservation values under the concepts of ecological civilisation and the conservation crisis behind the urgency to control and prevent COVID-19, the strong political influence of the *political window* spilled over to the *political stream* of the new *problem window*, which greatly enriched the *political stream* beyond the ongoing efforts of ecological civilisation. Political forces exerting guidance and suggestions to address the epidemic have strengthened the *political stream* (see Fig. 3).

This is aligned with a series of proposed *policy stream* solutions, notably around the tightened governance of wildlife. Following the COVID-19 outbreak, the CCP and the government quickly declared intentions to enhance wildlife governance to combat the epidemic and protect public health (see Phase 3). Democratic parties also proposed measures for epidemic control (CPPCC, 2020). Proposals from these *visible participants* typically align with government budgetary costs and mainstream thinking (Kingdon, 2014). Given the substantial economic and human costs of COVID-19, the Chinese government's responses appear to meet these criteria, thus gaining high *value acceptability*. The *policy stream* also drew inputs from *hidden participants*, like academic experts and NGOs, on how to reform wildlife governance (Wang, 2020). This *coupling* of *problem, political* and *policy streams* resulted in the boom of legislation seen since 2020, as described in Phase 3.

6. Discussion

Our analysis of 147 documents relevant to wildlife governance in China identified three phases marked by two distinct changes in overall legislative priorities: one brought about by the construction of the ecological civilisation and the other by COVID-19. These two waves of change can be seen as two interrelated policy windows in Kingdon's MSM of policy making. We found that although the emphasis on wildlife conservation was present in each phase, the drivers behind the legislation were distinct.

The primary driver of Phase 1 was the scarcity of certain wildlife that affected the functional integrity of ecosystems (wildlife protection) or human use (wildlife utilisation), so rare or precious wildlife were protected, with the primary focus of legislation across this phase prioritising utilisation. Phase 2 was characterised by ecological value as a driver: legislation began to redress the balance between conservation and utilisation with increased emphasis on the former while still enabling the latter. Phase 3 was driven by public health concerns but has arguably seen the most notable advances in conservation. Overall, our analysis revealed that the imperative to safeguard public health has driven more substantial changes in wildlife governance in China than the ecological values promoted by the concept of ecological civilisation. Given that changes driven by human interests—such as utilisation and public health—are present across all three phases, we began to question what these shifts in motivation for policy changes in wildlife governance actually mean for "wildlife conservation."

6.1 Human interest: A consistent driving force in wildlife governance across three phases

Although each phase has different drivers for establishing wildlife governance, human interest consistently parallels these forces, which is a double-edged sword. At times, it exacerbates biodiversity loss, while at other times, it enhances conservation efforts.

Legislation in Phase 1 was primarily driven by the scarcity of wildlife, aiming to protect the integrity of the ecosystem and prevent the extinction of rare species. However, this scarcity also positioned wildlife utilisation as a crucial economic tool for boosting the economy in the country's early years. In other words, during this phase, the ecological value of wildlife was deprioritised in favour of its economic value (Wang, 2014), with human interest actually becoming the main driving force behind wildlife governance. Consequently, this period saw the rapid growth of wildlife-related industries. Unfortunately, as scarcity drives up prices (Ren, 2020), economic growth also stimulates the smuggling and poaching of endangered species, leading to significant biodiversity loss across China (Harkness, 1998).

Governance in Phase 2 was driven by ecological civilisation, indicating that China no longer prioritises development over the environment (Ranjan, 2019). Specifically, the WPL began to recognise the ecological value of wildlife. However, this reform was motivated not only by environmental conservation but also by the pursuit of human interests. President Xi emphasised that constructing ecological civilisation should also meet people's growing demands for a beautiful environment (Xi, 2017). Fortunately, this goal, aligned with environmental protection, has brought reforms that enhance biodiversity conservation and ecosystem restoration (Ranjan, 2019).

While the ecological civilisation *political window* was influential and laid the theoretical groundwork for more radical changes seen in Phase 3 due to the COVID-19 *problem window* (Fig. 3), it still faces trade-offs inherent in socio-ecological challenges. This is because, in China, ecological progress is not an independent target but is intertwined with economic and social progress (Ranjan, 2019). Consequently, wildlife-related industries, notably those close to wildlife utilisation in TCM, continued to thrive during this period. Therefore, the challenge for China remains how to efficiently use environmental resources to achieve a win-win between a green economy and ecological security (Ranjan, 2019).

In Phase 3, the post-COVID-19 era, wildlife utilisation for purposes such as TCM, scientific research, and fur is still permitted, and even relaxed breeding regulations on “Sanyou” animals were introduced, which raised concerns about balancing conservation and wildlife use (Cui, 2023). Similarly, conservationists have criticised the designation “limited to wild population” in the List of Wildlife under Special State Protection. They are concerned that this change could encourage the illegal breeding of endangered species, particularly the non-terrestrial wildlife categories (59 kinds of species cover Reptilia, Amphibia, Osteichthyes, etc.). The underdeveloped technology for breeding these species and the difficulty in distinguishing between bred and wild populations could lead to the laundering of protected wild animals (Gone, 2020), like the Chinese giant salamanders (*Andrias davidianus s.l.*) (Lu et al., 2020). Moreover, although the pangolin’s protection status was upgraded to Class I in 2020, the Pharmacopoeia revised that same year still includes it as an ingredient in nine types of prescriptions rather than removing it entirely, retaining the threats to this endangered species (Wang et al., 2023). Despite these allowances, China’s wildlife legislation underwent unprecedented and drastic changes in response to the zoonotic epidemic. Public health concerns, one typical human interest, became the driving force, leading to significant improvements in wildlife conservation.

These three phases illustrate that wildlife conservation is never just an ecological issue but is closely linked to human interests. The concept of ecological civilisation emphasises that all humans are part of a shared destiny. The COVID-19 outbreak has demonstrated that humans are interconnected not only with each other but also with animals and the environment, aligning with the “One Health” concept (Jenkins et al., 2015). Though pursuing human interests results in environmental harms like biodiversity loss, zoonotic diseases, and climate change, the radical shifts in Phase 3 offer a new approach to enhancing wildlife conservation: formulating wildlife policies and legislation from the perspective of human interests. The importance, urgency, and initiative to solve a problem are often driven by perceived threats to human well-being. Thus, protecting animals, plants, and the environment through a human-centred approach can achieve results that exclusive ecological conservation efforts might not. This perspective ensures that conservation measures are not only ecologically sound but also socially and economically viable.

6.2 One-party rule: China's unique system that influences policy windows and conservation strategy

Under China's system of one-party rule, the CCP and the State administrative agencies usually dominate a closed process of policy making and changing, especially the Politburo of the CCP Central Committee, which decides the major policy guidelines (Li, 2020), including environmental governance.

Such a one-party system often faces criticism for prioritising party concerns during policymaking (Snape and Wang, 2020) and for limiting alternative viewpoints. And yet this very structure allows for policies and initiatives endorsed by the CCP and its core leaders to be thoroughly implemented across the country through top-down approaches, such as reform of legal institutions, revision of relevant legislation, and strong and effective enforcement (Ranjan, 2019). In this case of ecological civilisation, those are largely positive for conservation and the broader environment. This political system has been pivotal in opening the *political window* in Phase 2 and steering the *problem window* in Phase 3, marking the political stream's substantial influence on shaping these policy windows.

In political dynamics, internal government events can shape policy agendas, including leadership changes or shifts in ideological focus (Kingdon, 2014). In China, the CCP dominates, ensuring that policy directions remain relatively stable despite leadership changes (State Council Information Office, 2007). This stability means that once a political direction is set in China, it tends to endure longer than in other systems. Therefore, the philosophy of ecological civilisation, rooted in ex-President Hu Jintao's era, has continued to grow under President Xi Jinping, further cementing itself as one of the critical political streams of the problem window in Phase 3.

This political framework has significantly influenced Phase 3's changes. While policy windows allow for the translation of various values into policy, in China's system, directives from visible participants like the president and high-ranking officials more readily become policy (Kingdon, 2014). Thus, the government could swiftly enact legislation and policies to ensure strict wildlife governance after the epidemic breakout while maintaining wildlife farming and utilisation based on economic reasons. In contrast, calls from experts and the public (hidden participants) for a complete ban on wildlife trade and to end medicinal wildlife use (Wang and Jiang, 2020) were overlooked.

However, it must be acknowledged that China's political system has long been a powerful force binding wildlife governance and utilisation together. As previously noted, wildlife utilisation has persisted throughout all three phases, remaining constant even during the push for ecological civilisation and amidst public health crises. This enduring presence is due to the Chinese government's designation of wildlife as a natural resource for economic development. For example, wildlife farming has been recognised and supported for its role in job creation and poverty alleviation, particularly in rural areas (Li, 2020). Though wildlife trade can benefit sustainable conservation in some ways (Roe et al., 2020), market demands for wildlife and its products in China continue unabated, posing significant challenges to wildlife conservation.

7. Conclusions

China has a uniquely rich history of wildlife use and governance and an outsized role in shaping current wildlife trade dynamics. Throughout its history, China has shown a trend of

increasingly striving to protect nature and wildlife, with post-COVID efforts appearing as part of this ongoing progression. Yet, significant advances in wildlife protection have often been hindered by economic and cultural pressures to use wildlife resources (Zhu and Zhu, 2020). The recent legal changes after COVID-19 highlight the persistent challenges and possibilities China faces in its mission to conserve wildlife without compromising economic growth and social order. These changes call for more in-depth examinations to gauge their actual impact on preventing zoonotic diseases and conservation improvement in practice.

Additionally, this study highlights that strong conservation policies don't always stem only, or even primarily, from a direct desire to protect wildlife. As noted, the early wildlife legislation in Phase 1 focused on the economic benefits of wildlife utilisation, whereas Phase 3's substantial reforms were driven by public health concerns – both rooted in human interests. This indicates that in our human-centric world, exploring indirect methods to enhance wildlife protection could be beneficial. For instance, strategically leveraging "human interests" to gain policymaker support for conservation recommendations can be effective.

Moreover, our finding reveals China's unique (dis)advantage in conservation efforts. China's commitment to ecological civilisation as a core governance philosophy, coupled with swift and substantial responses post-outbreak, highlights the strengths of its centralised system in enacting and enforcing new policies. The policy windows of wildlife governance in China underline that a governance philosophy supportive of conservation, within such a state system, can significantly expedite conservation efforts, emphasising the importance of aligning party values with progressive conservation strategies. However, long-standing policies that support wildlife trade and utilisation also pose significant challenges for conservation efforts.

Overall, the evolution of wildlife conservation legislation in China over the past 70 years demonstrates that the factors influencing conservation are complex rather than straightforward, creating opportunities for those who want to bridge the gap between conservation science and policy (Troiano et al., 2024). This analysis offers both individual conservationists and broader conservation movements a valuable historical perspective, revealing trends and shifts in the motivations and discourses that shape conservation efforts. A more macro-level understanding of conservation policy is crucial for predicting how individual proposals may be received, how lobbying efforts can be most effectively framed, and how public movements can engage with policymakers.

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