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Policy analysis

Will the COVID-19 outbreak be a turning point for China’s wildlife protection: New developments and challenges of wildlife conservation in China

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1. China enacted new legislation on the consumption of wildlife

On 24th February 2020 the top Chinese legislative body, the Standing Committee of the National People’s Congress, at the brink of the global coronavirus disease 2019 (COVID-19) pandemic, adopted a decision to ban farming, trading, and consumption of all terrestrial wildlife for food consumption. The decision sets the tone for the revision of the Wildlife Protection Law (WPL), scheduled to be released in late 2020. Both the terrestrial wildlife ban and revised WPL have the potential to greatly reduce consumption of wildlife and aid in prevention of future zoonotic disease outbreaks. The government still faces severe challenges in reducing wildlife use in traditional medicine, strengthening habitat and ecosystem conservation, committing to long-term WPL enforcement, and promoting community education and institutional reforms. However, recent progress in establishing a stricter ban on wildlife consumption, consolidating fragmented protected areas, and increased openness to public oversight are promising developments. While it is clear that global pandemics like COVID-19 can cause massive human suffering and disruption of economies; governments can no longer allow business as usual for the wildlife industry, regardless of the monetary or cultural values it brings. Here we discuss the latest development and limitations of the current wildlife legislation in China and the recommendations for improving Chinese wildlife conservation to better protect biodiversity and reduce risks of spreading zoonotic diseases to humans.

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A legally binding decision to tighten wildlife consumption is anticipated, as the Huanan Seafood Wholesale Market in Wuhan is widely considered to be ground zero for COVID-19. Most of the early patients developing the acute pneumonia caused by the SARS-CoV-2 virus had been exposed to wildlife and livestock in that market. Genomic sequence analyses have exhibited a high resemblance among SARS-CoV-2 and coronaviruses circulating in bat populations, although the exact source of the virus remains uncertain. Intermediate animal host species are also being evaluated, including livestock and pangolins, the latter of which are critically endangered, in part, due to overconsumption in China. The COVID-19 pandemic has severely disrupted global society and economy and demonstrated the colossal cost of wildlife consumption. It also created a strong incentive for the government to prevent future outbreaks of zoonotic diseases by regulating consumption, trade, and trafficking of wildlife products.

All signs indicate that the Chinese government is determined to prevent future outbreaks of zoonotic diseases by enacting stricter legislation on wildlife consumption. The February 2020 ban by the Standing Committee of the National People’s Congress completely
prohibits the farming, hunting, selling, purchasing, and trafficking of species classified as terrestrial wild animals for food consumption. It covers not just wild-caught species that are recognized nationally and internationally as endangered species, but also applies to animals born and raised in breeding facilities such as Chinese bamboo rat (Rhizomys sinensis) and Malayan porcupine (Hystrix brachyura). The new ban does not include aquatic species and it does not affect other uses of wildlife, such as medicine, clothing, decorations, or pet trade. This ban is legally binding and took effect immediately at all levels of government during the period while the WPL is being revised and finalized. In the meantime, the most recent draft of WPL pending public comments includes an additional 100 and 300 species in its first-class and second-class protection lists respectively, more than doubling the total number of species listed in the current version of the law.

2. The existing wildlife legislation in China

The Chinese WPL was first adopted in 1988 and has been revised twice - in 2004 and 2016. The law contains five chapters and 42 articles, covering provisions on wildlife ownership, the scope of protection, protection and management mechanisms, and penalties for violations. In China’s legislative system, the existing WPL is an overarching law that only provides general guidance, whereas the supplemental lower laws and ministry-level policies define details regarding implementation and enforcement.

The current version of the WPL defines criminal conduct and associated punishment related to hunting, killing, selling, and purchasing of about 1900 rare and endangered animals that are present in China. The List of Protected Species defined by WPL is composed of first-class protection species (~100), second-class protection species (~200), and species of terrestrial wildlife that are beneficial or of important economic or scientific value (~1600) (Sanyou species) based on their corresponding risk of extinction (Cao, 2015). Severe penalties are imposed for hunting, purchasing, trafficking, and selling even a small quantity of first-class protection species (the number of animals involved in the crime is used to measure severity of the punishment and varies based on species). For the second-class protection species, the number of animals that need to be involved in the crime to warrant a severe penalty is higher. For species on the Sanyou list, local governments (province/autonomous region/direct-administered municipality) are responsible for defining the degree and extent of protection (season and location for hunting bans) and the severity of punishment for different violations. Local governments can also set up additional regional priority conservation lists and pass local legislation to protect them within their jurisdiction.

The current wildlife protection defined by WPL does not apply to approximately 1100 species that are not listed as rare or endangered. For example, only 38% of the mammalian species in China are protected, leaving 349 mammals, including all bat species, the suspected reservoir of SARS-CoV-2 and natural reservoir for a range of SARS-like coronaviruses unprotected (Li et al., 2005; Ge et al., 2013; Hu et al., 2017). The existing WPL also has many ambiguous categories where wildlife can still be utilized for commercial use such as consumption of fur, traditional medicine, and captive breeding, even for some species included in the first-class and second-class lists. For example, bear farms harvesting bile from caged live animals are legal. While an estimated 10,000 bears are kept in bile farms (Crudge et al., 2020), the government-sanctioned bear farms and utilization of bear bile fuels illegal trafficking of wild-caught black bears to bear farms; it also creates a way for poached bear products to enter the market, disguised as farmed bear products (Foley et al., 2011; Nijman et al., 2017). One of the biggest concerns over the existing Chinese wildlife legislation is how wildlife is considered a “wildlife resources”. The implicit belief is that wildlife exists as a natural resource to be exploited by humans to create values (Zhang et al., 2008). The emphasis on the potential economic return from the use of wildlife has made domestic enforcement of the law complicated, as it has allowed multiple exceptions and loopholes through which one can utilize and commercialize wildlife products, as long as it is not explicitly prohibited. The exemptions have also undermined China’s ability to fulfill its obligation to International Trade in Endangered Species (CITES) of Wild Fauna and Flora in curbing global trade of endangered species; the immense size and diversity of demand in the Chinese market is a driving factor for wildlife poaching and trafficking in neighboring countries and around the globe (Challender and MacMillan, 2014; Nijman et al., 2017).

The List of Protected Species under the WPL has also been criticized for being outdated because it does not provide the appropriate degree of protection based on the latest taxonomic classifications, geographical distributions, and phylogenetic relationships (Li et al., 2005). The inconsistency between species’ status on China’s Protected Species List and their extinction risk set by international conventions such as CITES and the International Union for Conservation of Nature (IUCN) can pose a serious threat to species with rapidly declining populations, often making the legislation and enforcement one step behind. The previous revision of the law has made progress by giving CITES-listed species the legal status of the domestic List of Protected Species for enforcement and prosecution purposes. For example, for the wildlife on the CITES Level I and Level II projection lists with foreign origin are managed as the first-class and second-classes protection species respectively. Even for species with both domestic and foreign distribution, such classification based on geographic origin can easily designate appropriate legal status. For aquatic animals, in theory, the CITES Level I protected species are managed as first-class protected species. The CITES Level II, Level III, and the domesticated and captive bred Level I species and their products are managed as second-class protected species. However, because there is no judgement of geographic origin and there are fewer aquatic species explicitly protected by the WPL (the Sanyou list does not include aquatic species at all), there is a greater ambiguity when enforcing the protection of CITES listed aquatic wildlife, particularly the ones not listed on WPL lists.

The WPL is only guiding legislation, enforcement and prosecution is defined by different lower laws and enforced by various authorities. The fragmented and inconsistent enforcement hinders the effectiveness of the regulations (Huang et al., 2020). For example, wild terrestrial animals are under the jurisdiction of forestry departments, while aquatic animals are under the agriculture departments (Huang et al., 2020). The definition of animal utilization and law enforcement mechanisms are drastically different between the two systems. As a result, the two authorities have not been able to coordinate on regularly updating protected species lists, aligning with international treaties such as CITES and the CBD (Convention on Biological Diversity).

3. Opportunities and potential challenges for wildlife conservation

The wave of new wildlife legislation in China is a major opportunity to mitigate the risks of future epidemic outbreaks of zoonotic disease within the global community and advance wildlife biodiversity conservation in China. While the revised law has the potential to change the prospect of wild animals, not only in China but worldwide, a variety of challenges still exist. We organized the following section by presenting a range of recommendations that would require sustained government support to achieve long-term success. We hope that our perspectives can assist both Chinese and international stakeholders to engage closely in ongoing and future opportunities to jointly forge a stronger wildlife legislation in China.
4. Long-term commitment to enforcement of wildlife consumption ban

One major challenge is to ensure the long-term effectiveness of the current efforts on banning wildlife consumption. When civets were implicated for SARS, a temporary ban stopped their consumption for food, but the strict ban was lifted a couple of months later when no further infections were detected (Liu, 2003). Although the global impact of the COVID-19 pandemic is far more severe and persistent than that of SARS, it remains to be seen whether this time the government agencies will stay committed to enforcing the wildlife consumption bans, specifically through patrolling, investigating, and penalizing businesses and individuals engaged in illegal activities. Without enforcement, much of the activities will continue; sustaining these efforts will be the key to the long-term success of the new policies. Strong enforcement is particularly needed when the economic impact of COVID-19 is still felt by local communities. The rural and indigenous communities are more likely to resort to natural resource extraction and wildlife-related shadow economy when other job options are exhausted (McNamara et al., 2020; Roe et al., 2020).

5. Expand the wildlife ban to a broader range

While the newly enacted ban primarily focuses on activities associated with consuming terrestrial wild animals for food, significant gaps remain in numerous forms of commercial usage, for example, the vast amounts of wildlife consumption for traditional medicine, valued at $5 billion yuan ($0.76 billion USD) in 2016 (Arranz and Huang, 2020). The specification of the ban creates a potential loophole that can be exploited, particularly since there is a relatively blurred line between medicine and food in China. In 2019, two species of pangolin (Manis javanica, Manis crassicaudata) were upgraded to the same level as the Chinese pangolin (Manis pentadactyla), now having a first-class protection status on the Chinese Protected Species List. However, given the widespread demand for pangolin scales for Chinese traditional medicine, large quantities of pangolin scales continue to be available in markets and are imported internationally as medical ingredients (TRAFFIC, 2015); the upgraded protection status and the new ban on food consumption will likely have limited impact on mitigating the dire situation of the pangolin. Under such circumstances, the list of protected species must be updated regularly to meet the conservation need (Yang et al., 2020), and the consumption of endangered or threatened wildlife for medicine should be banned without any exception.

Ultimately, it is insufficient to merely ban terrestrial wildlife consumption for food (Wang et al., 2020) from both public health and wildlife conservation perspectives. Continued endorsement of the various non-food use of wildlife products will not only leave the human population exposed to zoonotic diseases, but it will also fail to effectively mitigate the extinction risk for many wildlife species effectively. Strict implementation of the food consumption and other kinds of ban should be applied to all native wild species to ensure the long-term persistence of the vast biodiversity (Yang et al., 2020).

6. Overhaul of wet markets

The government also needs to overhaul the conventional operation of wet markets, to which both the early COVID-19 patients in Wuhan and the recent cluster of positive cases in Beijing were connected. However, the term “wet market” is an ambiguous one that defines many traditional markets across Asia and around the globe (Alberts, 2020). Originally, wet market denoted any place selling fresh produce, but global attention has focused on markets selling live, sometimes wild, animals (Petrkova et al., 2020). While some mainstream public opinions require a complete ban on wet markets avoid future pandemics of zoonotic diseases, not all markets selling live fish and meat would pose the same level risks of transmitting zoonotic diseases (Roe et al., 2020). Most important is how each market is operated, disinfected, what procedures and policies are in place, and what products are sold, and that all regulations are designed and implemented to minimize the risks of disease transmission (Jiang, 2020). Specific to wildlife conservation, wet markets that selling live wild animals and wildlife products are critical and must be front and center in government law enforcement campaigns against selling, buying, and trafficking of illegal wildlife products. While few wet markets provide important source of protein to lower-income populations, studies have shown that the primary consumer of wildlife products from wet markets are young, higher-educated and white-collar citizens (Zhang and Yin, 2014). As a result, law enforcement for wet markets that are selling wildlife product as food should be strengthened, since the opportunity to make profits with a relatively low risk of punishment could easily give rise to persistent consumption of wildlife products (Zhang et al., 2020).

7. Promote public outreach and institutional reform

In some respects, a massive cultural and generational shift is required to have far-reaching and long-term impacts. The practices for wildlife consumption and the use of traditional medicine have been ingrained in the Chinese culture for thousands of years. Notably, dependency on wildlife products had/has been prevalent in many cultures, and is not unique to China. However, given the large population and the purchasing power of China, the consumption, if left unchecked, will have dire consequences for domestic and global conservation. A quick ban would likely force the trade underground and make the problem of enforcement even more difficult. To be effective in the long-term, enforcement must be paired with community education on the risks of wildlife consumption and the value of biodiversity, and provisions for alternative resources for those who depend on traditional medicine for their livelihoods. Public campaigns and long-term integration into every level of society is essential for the law to be successful. A promising example is that residents of Beijing and Shanghai have shown significantly stronger support for wildlife protection compared with other Chinese cities. This was associated with continuous public awareness education campaigns led by various governmental agencies and civil societies (Zhang and Yin, 2014). During the campaign to combat the COVID-19 crisis, the neighborhood level government infrastructure (neighborhood committees) proved effective in relaying information, educating and monitoring exceptionally large numbers of people. These committees should be mobilized to become a key component of the future outreach campaigns and are well suited for tasks such as educating residents, monitoring of markets, and liaising with law enforcement.

Systematic changes in the government’s approach to the practice of traditional medicine are needed and should include revising the official Chinese Pharmacopoeia to remove most if not all wildlife ingredients, providing non-wildlife alternatives, and educating traditional medicine physicians as well as consumers. A revised Chinese Pharmacopoeia was partially released in June 2020. Pangolin scale is no longer listed in the new version, along with a traditional patent medicine that contains bat guano (National Pharmacopoeia Committee, 2020). However, the removal of an ingredient from the Pharmacopoeia does not equate to banning its use, unless the China Food and Drug Administration issues an administrative notice to explicitly state its prohibition. In the past, such notices have been issued to stop the use of rhino (Rhinocerotidae spp.) horn, tiger (Panthera tigris) bone, and leopard (Panthera pardus) bone products. Until an official ban is issued, the retail and the pharmaceutical production of traditional patent medicine that contains pangolin scales will continue to be legal. Different sections of Pharmacopoeia (e.g., ingredient, and potent formula) are not consistent on the use of pangolin scale. As a result, even though pangolin scale as an ingredient is delisted, many of the traditional patent medicines using pangolin scales are still listed as formulas in the 2020 version of the Pharmacopoeia (National Pharmacopoeia Committee, 2020). More
importantly, bear bile and other wildlife products are still listed as ingredients in the revised Pharmacopoeia. For wildlife species not directly associated with COVID-19, which created widespread public outrage and scrutiny on pangolin and bat consumption, it is not clear when the protection from Chinese medicine consumers and manufacturers will be extended to them. The Pharmacopoeia should be based on sound science in order to avoid major deficiencies in its quality, safety, effectiveness, health benefits, and its environmental impact.

8. Strengthen biodiversity, habitat, and ecosystem conservation

While most on-going legislative and public outreach efforts are focused on protecting public health, exclusively addressing wildlife issues directly related to zoonotic diseases could be a missed opportunity for making structural changes for treating the cause, not just the symptoms. Specifically, strengthening and improving biodiversity and habitat conservation should be a priority in all wildlife legislation. Achieving such goals can have long-term societal impacts on sustainability and public welfare, including creating eco-friendly local livelihoods, reducing environmental pollution, flood and soil erosion control, and producing many other positive results, including reduced risk of zoonotic diseases. However, it is still not clear which mechanisms designed to strengthen habitat conservation will be in the revised WPL. In many places, habitat encroachment goes hand in hand with wildlife poaching. It is only possible to sustain biodiversity by simultaneously stopping wildlife consumption while promoting initiatives and awareness in biodiversity and habitat conservation. Many Chinese protected areas have porous boundaries, and enforcement against activities such as cattle grazing and extraction of herbal medicines are weak (Huang et al., 2020).

Recent policy development for establishing national parks by consolidating fragmented reserves and protected areas is an opportunity to improve effectiveness and reduce inconsistencies in management. However, a complete halt on habitat encroachment within protected areas would require substantial government support to provide incentives (e.g., subsidies and training for alternative livelihoods) and disincentives (e.g., stronger enforcement and steeper penalties). Recently, some civil-society organizations have brought litigation to court to stop development projects that convert wildlife habitat. In March 2020, Kunming Intermediate People’s Court ruled to halt the construction of a hydropower station along Jiasa River in Yunnan province, where green peafowl (Pavo muticus) are found (Tang et al., 2019). The lawsuit was brought by three environmental organizations in 2017 to protect the endangered peafowl. The government’s openness to public participation and supervision is a welcome sign of new and promising positive impacts on biodiversity conservation around the world.

It is of paramount importance that legislators review wildlife consumption as a stressor in interconnected ecosystems, instead of focusing only on certain species of concern. Sympatric species and ecosystem functions are vital factors to consider. For example, farm-raised Asiatic grass frogs (Rana chensinensis), also known as ‘Chinese brown frog’, are commonly used in a beauty product known as ‘Hasma’ despite being a protected species. Though it is widely believed to be farmed and consumed at a sustainable level, many of the frog farms with a “free ranging” method can cause externalized damage to regional biodiversity. Frog farmers typically set up expansive enclosures in the forest, releasing tens of thousands of subadult frogs per enclosure, and remove predators such as snakes and rodents. Although such practices are claimed to have successfully maintained the overall population of Asiatic grass frogs, their negative impacts on the overall biodiversity have been consistently overlooked. The State Forestry and Grassland Administration and the Ministry of Agriculture and Rural Affairs issued a notice in May 2020 clarifying that Asiatic grass frogs are considered aquatic animals, and therefore its farming and consumption are exempted from the newly issued ban on terrestrial wildlife.

9. Leading global initiatives in combating wildlife poaching and trafficking

A complete ban on wildlife consumption in China could have enormous positive impacts on biodiversity conservation around the world. The consumption demand for wildlife products in China has been a major driver behind the poaching and trafficking of wildlife products globally. TRAFFIC data from 2016 show that 1,000,000 pangolins were captured over the past ten years, and China is one of the biggest markets of trafficked pangolins (TRAFFIC, 2015). Many Southeast Asian countries funnel large portions of wildlife products to China or for catering to Chinese tourists. There are more than 31,500 terrestrial bird, mammal, amphibian, and reptile species traded globally (Scheffers et al., 2019). Hotspots of those traded wildlife species are mostly in tropical regions such as southeast Asia and eastern Africa, which highly overlap with the countries involved in China’s Belt and Road Initiative. China should play a more active role in leading its Belt and Road partner countries to develop and implement rigorous standards to monitor habitat conversion and combat wildlife poaching and trafficking. It is an opportunity for China to leverage its investment in infrastructure overseas to create a more conservation and environmental protection through international cooperation network.

10. Conclusion

About 60% of emerging infectious diseases (EID) in people come from animals, over 70% of which are sourced from a wild animal (Jones et al., 2008). The wildlife trade has spawned global health crises around the world, including SARS-CoV-2, SARS-CoV, Middle East Respiratory Syndrome coronavirus (MERS-CoV), highly pathogenic avian influenza, ebolavirus, and henipaviruses. Humans might be moving towards a new normal when emerging zoonotic diseases are posing a constant threat to societies, and sustainable control measures need to be ensured over the long term (Sofos, 2008). The most effective step for mitigating the risk of future zoonotic disease outbreaks is to minimize contact between humans and wild animals (Karesh et al., 2012). The newly enacted decision and up-and-coming revision of the WPL have the potential to be powerful tools for limiting future outbreaks of zoonotic diseases directly through the minimization of human and wild animal interfaces. However, as China’s population continues to grow, and if the demand for wildlife products is unchecked, high-risk exposures to wildlife will be challenging to control. Halting wildlife trafficking, redesigning the focus of wet markets, and reducing consumer demand through new legislative and executive actions can be a significant step in the right direction for reducing human-wildlife interfaces and the risk of future outbreaks of zoonotic diseases. But the success of wildlife laws also hinges on long-term commitment and continued efforts in enforcement and education long after the current pandemic is over.

It is increasingly clear that global pandemics like COVID-19 have the potential to cause massive human suffering, disruption of economies, and destabilization of societies. The risk factors of emerging zoonotic pathogens (human density, land-use change, climate change) continue to grow (Singh et al., 2020). At this critical time in the world’s history, China’s government now stands at a precipice of decision making, with the world facing crises on multiple fronts due to the spread of disease from wildlife to humans. The revision of China’s WLP faces severe challenges for implementation, but offers unprecedented opportunities for promoting human well-being, fostering healthier ecosystems, and protecting biodiversity around the world.

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Qiongyu Huang: Conceptualization, Methodology, Writing - original draft.

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