

## COVID-19 TREATMENT MAY IMPACT SUN BEAR

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Submitted final draft: 1 December 2020

Accepted: 3 December 2020

<http://doi.org/10.46754/jssm.2022.03.001>

**Abstract:** Campaigns for global ban of wildlife trade and consumption have been carried out extensively since the emergence the Coronavirus Disease 2019 (COVID-19) at the end of 2019. However, there was reportedly an initiative to use sun bear bile to treat this zoonotic disease in China. This new development may endanger sun bears (*Helarctos malayanus*) in Southeast Asia, particularly Malaysia, because around 60% of the traditional Chinese medicine shops offer the bear's parts for treating various ailments. In our opinion, wildlife bans and conservative efforts need to be addressed systematically by strengthening law enforcement and banning wildlife product consumption and trade on various platforms, regardless of cultural belief. A movement control order is also proposed at forest reserve areas and national parks during the night or at certain periods. Collaborations are needed between enforcement agencies (e.g. Department of Wildlife and National Parks, police, the armed forces and Customs Department) to patrol protected forests and border smuggling points, besides adoption of the latest surveillance technology to keep the trade in check (e.g. long range drones with infrared thermal imaging system and geographic information system for crime mapping). Citizens can also play their role in aiding the effort through various awareness programmes and helping enforcement agencies by joining the People's Volunteer Corps. Banning of wildlife trade and consumption, if globally monitored and enforced, may bring benefits to the world like preventing the spread of zoonotic diseases and wildlife sustainability.

**Keywords:** Sun bear, wildlife trade, conservation, COVID-19, zoonotic diseases, pandemic, Malaysia.

**Abbreviations:** Coronavirus disease 2019 (COVID-19), traditional Chinese medicine (TCM), International Union for the Conservation of Nature (IUCN).

### Introduction

Coronavirus disease 2019 (COVID-19) is a zoonotic disease that was first identified in Wuhan, China, in December 2019. Since then, it has become a deadly menace after being declared a pandemic on March 11, 2020, by the World Health Organisation (WHO, 2020; Edinur & Abdullah, 2020; Mat *et al.*, 2020). The source of the outbreak is believed to be from a market selling exotic wildlife and wildlife products. Subsequently, campaigns for global ban of wildlife trade and consumption have intensified to protect endangered species and

prevent the repeat of a pandemic similar to COVID-19 (Ribeiro *et al.*, 2020). However, the bear population may soon find itself under threat, including the Malaysian sun bear (*Helarctos malayanus*), following a news report of initiatives in China to use bear bile as a supplement to treat COVID-19 patients (FMT, 2020). In China, products from bear farms are legal although those obtained from wild bears are not, as with the import of bear bile from other countries (Haikui & Zhi, 2006). Nonetheless, wild bears are still captured to support farming activities, and this problem may

extend beyond China's borders (Gomez *et al.*, 2020). In Malaysia, our local wildlife authorities are still lacking institutional capacity in terms of adequate skilled manpower and advanced equipment (Ariffin, 2015) to effectively conduct wildlife enforcement programmes that are capable of disrupting the complicated network of wildlife trade. Hence, these factors, taken together with uncontrolled habitat lost, may cause sun bear populations in Malaysia to meet the same fate as the Sumatran rhinoceros (*Dicerorhinus sumatrensis*), which has become extinct in the country (Flynn & Abdullah, 1983, 1984; Abdullah, 1985). The actual population of sun bears in the wild is unknown, but data from the International Union for the Conservation of Nature (IUCN) shows that it has declined by more than 30% in the last three decades (Scotson *et al.*, 2017).

### ***Sun Bears in Pre- and Post-COVID-19 Pandemic***

The new proposed COVID-19 treatment in China may put sun bears throughout Southeast Asia at risk of extinction, given the high demand for their bile (FMT, 2020). Bear bile contains ursodeoxycholic acid, a therapeutically active compound that is extracted directly from the gall bladder of live bears under inhumane conditions (Haikui & Zhi, 2006). About 60% of traditional Chinese medicine (TCM) shops have been found to offer bear parts, including those of sun bears, for treatment of various ailments (Table 1). The unfortunate bears are usually caught in isolated and fragmented forest areas, with restricted movement bound by industrial agricultural crops, human settlements and infrastructure development (Williamson, 2006; Feng *et al.*, 2009; Krishnasamy & Shepherd, 2014; Keely *et al.*, 2019; Subramanian *et al.*, 2020).

In 2018, nearly 1,000 operations were carried out in Peninsular Malaysia by the Enforcement Division of the Department of Wildlife and National Parks (DWNP). Many protected species and their parts were seized, and more than 1,100 investigation papers had been opened under the Wildlife Conservation Act 2010 (Act 716) and the International Trade In Endangered Species

Act 2008 (Act 686) as illustrated in Figure 1 (DWNP, 2018). Interestingly, live sun bears, pangolins (*Manis javanica*) and their parts were among the most frequent items seized (Table 1), which indicated a high demand for those items even before the pandemic began (DWNP, 2018). It is important to note that there is growing body of evidence showing that pangolins may act as an intermediate host in the transmission of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) — the virus that causes COVID-19 — from bats to humans (Zhu *et al.*, 2019; Abdelrahman *et al.*, 2020; Sohpal, 2020). SARS-CoV-2 belongs to the same group of coronaviruses that caused the outbreaks of Severe Acute Respiratory Syndrome (SARS) in China in 2002, and the Middle East Respiratory Syndrome (MERS) in Saudi Arabia in 2012 (Morens *et al.*, 2020).

Therefore, current and previous coronavirus outbreaks further emphasise the need for a complete ban of wildlife trade and consumption to prevent the emergence and re-emergence of zoonotic infections (Wang *et al.*, 2007; Hemida *et al.*, 2017). Malaysia has lost its Sumatran rhinoceros in 2019 due to a population crash beginning in the 1990s as a consequence of illegal hunting and conversion of prime forest habitats to agricultural plantations. In fact, the extinction of the animal has been well anticipated since 1983 (Flynn & Abdullah, 1983, 1984; Zafir *et al.*, 2011; Abdul-Hamid *et al.*, 2013). The rhinoceros' body parts used to be highly prized by Chinese people all over Asia for its alternative medicinal qualities, and the illegal trade to fulfil an insatiable demand has further sealed its fate (Abdullah, 1985; Abdullah *et al.*, 1989; Zainuddin *et al.*, 1990; Abdul-Hamid *et al.*, 2013) (Table 1).

Several recommendations for the conservation of sun bears in Malaysia have been proposed by Wong (2006) and Shepherd (2010). These include a nationwide survey to gather data on their numbers, distribution and habitat preferences, besides improving resources for sun bear conservation (e.g. reduce logging and opening of new land for oil palm plantations). More studies are needed to understand their

Table 1: Comparative illegal trade of Sun bears, Sunda pangolin and Sumatan rhinoceros

No.	Species	Part	Estimated per unit	Region	Reference
1	Sun bear	32 seizures of Sun bear parts in Sabah	USD12 to 462 per gall bladder	Sabah and Sarawak	Gomez, L., Shepherd, C. R., & Khoo, M. S. (2020). Illegal trade of Sun bear parts in the Malaysian states of Sabah and Sarawak. <i>Endangered Species Research</i> , 41, 279-287.
		25 TCM outlets sale of gall bladder	Bear bile pills, USD0.12 to USD0.13 per pill		
2	Sun bear	74 sun bear trophies in 16 settlements	No value given	Sarawak	Krishnasamy, K., & Shepherd, C. R. (2014). A review of Sun bear trade in Sarawak, Malaysia. <i>TRAFFIC Bulletin</i> , 26(1), 37.
3	Sun bear	33 individuals, Paws, meat, claws, jaws, legs, entire animal and live cub	No USD value given	Peninsular Malaysia	Shepherd, C. R., & Shepherd, L. A. (2010). The poaching and trade of Malaysian Sun bears in Peninsular Malaysia. <i>TRAFFIC Bulletin</i> , 23(1), 49.
4	Sun bear	64 paws 2 skulls 266 bones 24 gall bladder 1087 claws 67 canines	No USD value given	Indonesia Kalimantan	Gomez, L. (2020, May 27). Bear-ly on the radar: Indonesia's illegal trade in Sun Bears could worsen in the pandemic. <i>The Revelator</i> . <a href="https://therevelator.org/indonesia-illegal-trade-sun-bears/">https://therevelator.org/indonesia-illegal-trade-sun-bears/</a> Downloaded on 1 December 2020.
5	Sunda pangolin	22 frozen bodies	No USD value given	Indonesia	Gomez, L. (2020, May 27). Bear-ly on the radar: Indonesia's illegal trade in Sun Bears could worsen in the pandemic. <i>The Revelator</i> . <a href="https://therevelator.org/indonesia-illegal-trade-sun-bears/">https://therevelator.org/indonesia-illegal-trade-sun-bears/</a> Downloaded on 1 December 2020.

6	Sunda pangolin	Seized scales 2.058 kg	RM25.3 million	Peninsular Malaysia	Muhammad Afham Ramli. (2020, November 29). Perhilitan lupus sisik tenggiling bernilai RM25.3 juta. <i>Sinar</i> . <a href="https://www.sinahrarian.com.my/article/112487/BERITA/Jenayah/Perhilitan-lupus-sisik-tenggiling-bernilai-RM253-juta">https://www.sinahrarian.com.my/article/112487/BERITA/Jenayah/Perhilitan-lupus-sisik-tenggiling-bernilai-RM253-juta</a> .
7	Sun bear	Stuffed bear Live animal	No value	Selangor	Perhilitan Rampas Beruang Madu, Kucing Batu dan Kongkang. (2009, December 7). <i>Bernama</i> . <a href="https://www.mstar.com.my/lokal/semasa/2009/12/07/1/perhilitan-rampas-beruang-madu-kucing-batu-dan-kongkang">https://www.mstar.com.my/lokal/semasa/2009/12/07/1/perhilitan-rampas-beruang-madu-kucing-batu-dan-kongkang</a> .
8	Sumatran rhino	Horn	RM50,000.00 per horn	Peninsular Malaysia	Abdullah, M. T. (1985). <i>A Sumatran rhinoceros conservation plan for the Endau-Rompin National Park, Malaysia</i> . (MSc.). Division of Forestry, West Virginia University. pp. 1-107.

reproductive behaviour, dietary patterns and genetics, so breeding programmes may be carried out like those for giant pandas. Awareness programmes may be conducted among the public, especially school students, to educate the future generation and discourage demand for wildlife products. Deterrent measures must also be put forward to curb illegal hunting and trade (e.g. exposing and punishing those involved through the mass media). To achieve this, existing laws may be strengthened and the number of enforcement personnel should be increased. In addition, other strategies such as implementing a movement control order at forest reserve areas or national parks during the night and on certain periods may seem feasible to deter the presence of poachers. To effectively monitor this illegal trade, enforcement agencies must cooperate and coordinate their efforts not only in the country’s forests, but also on all fronts, such as borders, custom checkpoints, sea routes and transport hubs. Agencies may also consider adopting the latest advancements in surveillance technology, such as long range drones with infrared thermal imaging system and geographic information system for crime mapping to effectively monitor large areas for poaching. Finally, local communities, especially those in rural areas, must also be roped in and empowered to contribute to enforcement and conservation efforts.

**Conclusion**

In our opinion, wildlife bans and conservation efforts need to be addressed systematically through strengthening of law enforcement strategies, and discouraging wildlife product consumption and trade via various platforms, irrespective of spiritual and cultural belief. This requires a collaborative effort between scientists, health practitioners, policymakers and the general population. Banning wildlife trade and consumption globally will ultimately benefit the world in the long run in terms of human health, wellbeing and wildlife sustainability.

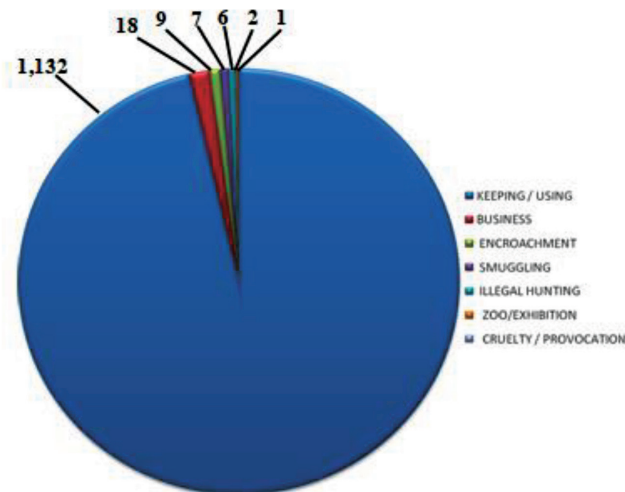


Figure 1: Number and types of offences committed under the Wildlife Conservation Act 2010 (Act 716) and the International Trade In Endangered Species Act 2008 (Act 686) registered by the Department of Wildlife and National Parks in 2018 (Source: DWNP, 2018)

**Acknowledgements**

This work was supported by the National Conservation Trust Fund (NCTF) for Natural Resources from Ministry of Energy and Natural Resources Malaysia (KeTSA) (Grant no: 304/PPSK/6150219) awarded to Hisham A. Edinur, M.T. Abdullah and colleagues. We also acknowledged the reviewers for constructive comments on earlier drafts; the Department of Wildlife and National Parks, Universiti Sains Malaysia, Faculty of Fisheries and Food Science, Universiti Malaysia Terengganu, and Mr. Dennis Ten Choon Yung for various assistance and facilities.

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