

Study identifies illegal hunting as a threat to China's wildlife and global public health

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Illegal hunting and trading of wildlife in China is becoming a significant threat to biodiversity and public health, according to a new paper by a team of researchers that includes two scholars from the School of Public

and International Affairs. It is the first comprehensive assessment of this issue for China.

The paper, "Assessing the illegal [hunting](#) of native wildlife in China," appears in *Nature*. Its co-authors are Dan Liang, Xingli Giam, Sifan Hu, Liang Ma, and David S. Wilcove. Liang is an associate research scholar at SPIA's Center for Policy Research on Energy and the Environment (C-PREE), and Wilcove is a professor of ecology, evolutionary biology and [public affairs](#), and the High Meadows Environmental Institute, as well as SPIA's acting executive vice dean.

The researchers used Chinese court documents that tracked convictions for illegal hunting in the country, and then created a series of models to predict how much more widespread the extent of illegal hunting is beyond the individuals who were caught and prosecuted.

The court documents revealed a total of 9,256 convictions for the illegal hunting of more than three million individual animals from 2014 to 2020. Those animals represented more than 20% of China's bird, mammal, reptile, and [amphibian species](#), and included almost a quarter of the endangered [species](#) in those categories.

"We were very surprised by the large number of species that were illegally hunted in the space of just six years," Liang says.

"But of course," adds Wilcove, "only a fraction of the actual number of hunting incidents results in prosecution and conviction, so that means these numbers must be the tip of the iceberg. And so, we then applied various statistical methods to show that, in fact, the iceberg is very large indeed."

There is limited evidence in the field to suggest how much bigger the metaphorical iceberg is, but the researchers cited some of their ongoing

work that indicates it's optimistic to think that even 1% of all illegal hunting incidents are detected and prosecuted.

The researchers were more conservative for this paper, though: for an extrapolation analysis, they assumed that 10% of all illegal hunting incidents had been detected and prosecuted and then estimated the total number of species that were likely hunted. They concluded that at least 28% of China's native terrestrial vertebrate species, including 40% of its birds, may have been taken during this period.

They further identified an additional 781 species, including more than 90 threatened species, that were likely to have been targeted by hunters over the course of the six years.

"Illegal activities are inherently very difficult to study because, by definition, people don't talk about them or practice them out in the open," Wilcove says. "It's quite a scientific challenge."

The paper shows that the illegal hunting incidents were widespread across the country, though there was a higher concentration in the areas closer to cities, which suggested that the illegal hunting was potentially done for commercial purposes and resell opportunities. "These sorts of spatial analyses can provide critical insights about the locations and habitats where illegal hunting is most intense, and they may also tell us something about the motivation behind the hunting," notes Giam.

Additionally, the researchers found that only 5% of convictions accounted for 90% of the individual animals that had been illegally hunted, which suggested that large commercial poaching operations were responsible for much of the loss of wildlife.

The paper is clear that the illegal hunting of wildlife is a threat to China's biodiversity and creates a potential [public health](#) risk to the people of

China because of the possibility of transmission of diseases from hunted animals to people. The researchers also note that the problem does not stop at China's borders.

"The rest of the world should also be concerned," Wilcove says. "First, the loss of biodiversity in China is a loss of biodiversity for the whole world. Second, there's no reason to believe that China is unique in terms of this problem. In fact, there's evidence of hunting depleting wildlife populations in many parts of the world. And third, disease outbreaks stemming from the wildlife trade have the potential to escape the borders of any one country."

Liang believes the approach the research team took in this study could be used to investigate the problem of illegal hunting in other countries. However, the actual results of the research in this paper stand alone as they relate to the problem in China and should not be used to characterize what's happening in other countries.

"Illegal hunting is clearly a threat to China's wildlife, but we also have to recognize that China is also doing a lot of things to address it," Liang says. He cites the Chinese government recently amending the National List of Protected Animals of China by adding 517 species, including 31 endangered species predicted by this study to be at high risk of being targeted by hunters.

The country also enacted a ban in the early days of the COVID-19 pandemic on the consumption of "wild-caught species," and it has deployed public information campaigns encouraging a reduction in the demand for [wildlife](#) products.

The researchers say they hope their study will generate additional interest in China in the problem of [illegal hunting](#) and will inspire other scientists to study this issue in other countries.

More information: Dan Liang, Assessing the illegal hunting of native wildlife in China, *Nature* (2023). DOI: [10.1038/s41586-023-06625-0](https://doi.org/10.1038/s41586-023-06625-0).
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