Exaggeration of the US role in the international tiger trade: Response to Khanwilkar et al. (2022)

This letter is a response to the recently published paper by Khanwilkar, Sosnowski, and Guynup (2022) that described a decade of importation of tiger parts and products into the United States. This study included two fundamental errors: the misinterpretation of wildlife trade violations and the handling of certain wildlife trade data points as objective scientific values, when they are not.

First, the authors did not consider that many of these “tiger” products (i.e., Traditional Chinese Medicines, TCMs) were unlikely to actually contain any bone, tissue, or other material derived from tigers (Panthera tigris). This is because the US Fish and Wildlife Service (USFWS or Service) Law Enforcement Management Information Systems (LEMIS) database records used by the authors in this study were often created based on the presence of a picture of a tiger on a box label or the presence of “tiger” stated in the ingredients. Neither of these are reliable indicators of the genuine presence of tiger bone (or other body parts) in products purported to contain this wildlife ingredient, although U.S. law does allow for such confiscations under the “claim to contain” provision of the Rhinoceros and Tiger Conservation Act (16 USC §5305a). It has been commonly known in the international wildlife trade community that such fake products (i.e., products purporting to contain certain wildlife ingredients, when such ingredients are not actually present) have been exported regularly from China (Cameron et al., 2004; Gaski, 1998; Nowell, 2000).

When seized by USFWS, most tiger medicinal items are not forensically assessed to confirm the presence of material sourced from tigers. In a previous study where testing was performed on similar “tiger” medicinal items using a highly sensitive tiger-specific real-time PCR assay, all seven varieties of tested pills and plasters showed no detectable trace of tiger DNA. Furthermore, test results from fragments of “tiger” bone seized from TCM shops in the United Kingdom, the Far East, and the United States showed that they were instead bones from cattle and pigs (Wetton et al., 2004). The results published by Khanwilkar et al. (2022) assumed the presence of tiger material based on USFWS LEMIS trade records, but the physical examination of hundreds of similar TCMs by the USFWS National Wildlife Forensics Laboratory (Ashland, Oregon) revealed no evidence of tiger bone (Wetton et al., 2004). Although it is plausible that material sampled more recently may have tested positive, Khanwilkar et al. (2022) do not offer USFWS forensic testing results to this effect, and thus it is to be expected that most of these items either continue to be deceptively labeled as containing tiger or include such low trace amounts that they would test negative for the presence of tiger, if sampled. In either scenario, despite the presence of tiger trade violations in the USFWS LEMIS data for TCM products, this is not scientific evidence of tiger trade. This scientific uncertainty should have been explicitly recognized and caveated by Khanwilkar et al. (2022) as a limitation of the data used in their study.

Secondly, the authors’ interpretation of the LEMIS data did not account for the arbitrary nature in which USFWS records the source of confiscated specimens. USFWS often lists “wild” as a default source code when no source is specified by the importer, and this is normally the case since the overwhelming majority of tiger TCM products are confiscated without proper declaration to the Service. It is important to note that many illegally traded genuine tiger products are suspected to have originated from the intensive tiger farming operations that produce tiger bones and other body parts for TCM products (CITES CoP18 Doc. 71.1, Annex 4). Still, in the absence of verifiable information, USFWS often chooses to code these products as containing “wild” tiger ingredients, even when the source of the allegedly present wildlife material is not substantiated. There is no quality control system to automatically identify and correct these types of wildlife trade data guesses and inaccuracies, and they become transferred from LEMIS to the CITES Trade Database through USFWS submission of its CITES Annual Reports (Kolby & Weissgold, personal observations).

As a result of these data challenges and limitations, the USFWS LEMIS database is not adequately reliable to use for...
scientific analysis, unless verification of recorded data can be done. As such, the trade analyses and conclusions presented by Khanwilkar et al. (2022) should be interpreted as an unreliable, and most likely, serious mischaracterization that overstates actual tiger import levels in the United States. USFWS LEMIS data misconceptions and errors are common among wildlife trade studies that have not received peer-review from LEMIS data experts (Challender et al., 2022); Khanwilkar et al. (2022) appears to fall into this category. Unless LEMIS data are verified and interpreted correctly, results of their analyses may mischaracterize and overstate trade and risk misinforming policy processes related to the conservation impacts of tigerfarming, ultimately to the detriment of wildlife conservation.

AUTHOR CONTRIBUTIONS
Jonathan Kolby and Bruce Weissgold equally conceptualized, developed and refined this paper.

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CONFLICT OF INTEREST
The authors declare no potential conflicts of interest.

DATA AVAILABILITY STATEMENT
No new primary data were collected for this manuscript.

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