



# Understanding public perceptions and motivations around bear part use: A study in northern Laos of attitudes of Chinese tourists and Lao PDR nationals



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## ABSTRACT

The trade in bear bile and other bear parts in Southeast Asia and China is a leading driver in the decline of Asian bear populations, and is a serious conservation challenge. Currently consumption of bear parts is unsustainable, and could lead to the extinction of some bear species in the wild. Reducing demand for such products is at the core of strategies to conserve species involved in illegal wildlife trade. A better understanding of the attitudinal, cultural and economic mechanisms behind bear bile consumption behaviors would inform more effective education and awareness efforts towards changing these socioeconomic variables. Using surveys, we conducted a preliminary investigation in northern Laos of Chinese tourists in Laos ( $n = 401$ ) and Lao ( $n = 887$ ) respondents' use of bear bile and bear parts, as well as differences in attitudes, value orientations, and knowledge between these two groups. Our results indicate that the availability of the product leads to greater reliance, as seen in our survey results of the Chinese respondents. Lao respondents, though less reliant, were more likely to prefer wild bear bile. Chinese tourists appeared to be more knowledgeable about bear conservation, versus Lao respondents. In general, we note substantial differences in attitudes, behaviors, and knowledge of bear part consumption between Lao and Chinese respondents. Based on these results, we advise the integration of educational programs with other strategies throughout Southeast Asia to increase understanding of the linkage between the decline in bear populations and the use of bear bile and other bear parts, thereby reducing demand.

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## 1. Introduction

There is an active trade across Southeast Asia and China transporting wildlife products for use in traditional medicine (TM). Over recent decades, in nearly every case, this demand has led to unsustainable killing of wildlife, causing rapid declines in the affected animal populations (Bennett, 2015; Ferreira et al., 2015).

TM uses a variety of animal products ranging across taxa, and is a primary driver of the illegal wildlife trade (Donovan, 1999; Nijman, 2010; Vu, 2010). Use of bear bile and other bear parts has been an integral part of many Asian cultures for centuries (Tang et al., 2008; Unschuld, 1985), with bear bile/gallbladder prescribed by TM for various ailments, including fever, hemorrhoid, inflammation, and general pain reduction (Feng et al., 2009). Other bear parts, such as bear paws, have been incorporated into rice wine and soup as tonics and status symbols since at least 300 BCE (Before the Common Era) (Legge, 1865; Yiqing, 1994). Such consumption is a leading cause of population declines of bears in

the wild. Both the Asiatic black bear (*Ursus thibetanus*), also known as moon bear, and the sun bear (*Helarctos malayanus*) are currently listed as Vulnerable on the IUCN Red List, with populations having declined by 30–49% and 30%, respectively, over the past 30 years (Fredriksson et al., 2008; Garshelis and Steinmetz, 2008).

International commercial trade in Asiatic black bears and sun bears is prohibited under Appendix I of CITES, to which China and all South-east Asian nations are party to (with the exception of Timor-Leste). Domestic trade, transport and hunting of Asiatic black bears and sun bears is completely banned in most Southeast Asian countries. However, weak law enforcement and loopholes in the legislation mean that bears continue to be exploited. For instance, since the 1990s it has been illegal in Vietnam to keep bears for the purpose of bile extraction, but until recently bear bile farms were widespread (Foley et al., 2011; Nguyen, 2007).

One consequence of stronger laws on wild bear capture and consumption has been the creation of bear farms as alternatives for bear bile production (Mills and Servheen, 1991). These farms are considered a supply side solution, an alternative that will flood the market with product, satisfying demand and leading to a subsequent decrease in

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demand for wild bear bile, followed by a decrease in value (Damania and Bulte, 2001).

Evidence shows that the market for wildlife parts is unstable, making bear farms a risky and ineffective conservation option (Livingstone and Shepherd, 2016). Bear farming has also been severely criticized for cruelty. In most cases bears are kept in inhumane conditions in these farms for several years (Livingstone and Shepherd, 2016; Mills and Servheen, 1991).

China has claimed that all bear bile used within the country comes from farms (Mills and Servheen, 1994), but this seems not to be the case (Dutton et al., 2011). Across China and Southeast Asia, most bears in farms are wild-caught (Burgess et al., 2014). Bear parts and derivatives are often sourced from wild-caught individuals or produced from facilities housing bears mostly captured from the wild (Loeffler et al., 2009; Nguyen, 2007; Robinson et al., 2007).

Farming itself could be increasing the overall market for bile as well as the demand for wild bear bile (Drury, 2009; Dutton et al., 2011; Mills and Servheen, 1994; Servheen et al., 1999). Furthermore, in TM, and in traditional animist-centered thought, the strength of the species is a valued attribute, hence the popularity of such animals as tigers and bears. This adds a further layer of complexity by encouraging consumers to value the medical benefits of wild-caught animals over farmed animals, which are considered “weaker” (Dinerstein et al., 2007; Damania and Bulte, 2007).

Cultural values differ throughout Asia, compelling behaviors, such as consumption of bear bile, to vary society by society. Chinese cultural beliefs generally speaking are based on Confucius, Taoist, and Buddhist theory (Leung, 2010), while Lao people tend to be primarily influenced by Buddhism intertwined with traditional animism (Kislenko, 2009). Furthermore, China is a regional power (Miller, 2005); whereas Laos is one of the poorest countries in East/Southeast Asia (Kislenko, 2009). These differences lead to differing belief structures, motivations and behaviors, all of which need to be considered when developing wildlife trade demand reduction strategies (e.g. Challender et al., 2014; Veríssimo et al., 2012), so as to better address cultural and economic drivers of illegal wildlife trafficking in Southeast Asia (Nekaris et al., 2010).

The dynamics of the market and consumption demographics of bear parts is not fully understood in Southeast Asia. Although research has been performed on bear farms and declining bear populations (Livingstone and Shepherd, 2016), there has been little focus on understanding drivers of bear part purchase. To help address this void, we used questionnaires with value, attitudinal, behavioral, and knowledge questions pertaining to bear part consumption and conservation. Current theory holds that humans operate based upon a hierarchical scale, wherein people's behavior is influenced most directly by their attitudes, which are in turn influenced by knowledge and value orientations.

We surveyed respondents in northern Laos comprised of local residents, Western tourists and Chinese tourists. While tourists from other SE Asian nations were also present in the survey area, this study focused primarily on Chinese tourists and Lao residents, due to the popularity of northern Laos as a Chinese tourist destination. It would be valuable for a future study to more broadly survey tourists from other SE Asian nations where bear products are used.

Since our survey samples were limited in geographic range, as well as in effort across all sections of society (especially regarding Chinese tourists), there are some limitations on generalized conclusions. However, these data indicate potentially important similarities and differences in attitudes, perceptions, value orientations and behaviors between nationalities regarding bear product usage, and the importance of such data to inform the design and to monitor outcomes of demand reduction campaigns and education programs, and their value of expanded research in this field.

We focused on potential disparities between Lao and Chinese respondents because of economic and cultural variations between these

two societies. Our null hypotheses are that there is no difference in Chinese and Lao respondents' attitudes, value orientations, knowledge, and behavior, and that bear part consumption and bear conservation knowledge does not differ between these two nationalities.

## 2. Materials and methods

### 2.1. Study site

Surveys were conducted in Luang Prabang Province, a mountainous area of northern Laos characterized by biological and ethnic diversity (Berliner, 2012; Coates et al., 2005). It was chosen as the study site because it is the biggest tourist destination in Laos (Laos Tourism Administration, 2009) with the largest numbers of Western, Chinese, and other Asian nation visitors.

Surveys were conducted in Luang Prabang Town, its surrounding villages, and at Tat Kuang Si Park (TKS), a Provincial protected area approximately 30 km southwest of the Town. Within TKS there is a bear sanctuary, run by Free The Bears (FTB), for which there is no extra cost to park visitors to enter. The sanctuary holds Asiatic black bears that were rescued from the pet trade and/or bear bile farms. Since these bears cannot be re-released into the wild, FTB provides lifetime care for the bears in large, fenced natural forest enclosures. The sanctuary also has displays and signs with conservation messages, including information about usage of bear parts. TKS was chosen as a sampling site as it is the number one tourist destination for Luang Prabang, and the park is also very popular with locals for weekend picnics and walks.

### 2.2. Survey instrument

An anonymous self-administered survey comprised of a majority of closed-questions with some open questions was used to collect data (Appendix 1). Self-administered surveys, rather than interviews, were chosen to help increase chances of truthful responses to sensitive questions (Solomon et al., 2007; St. John et al., 2011). Lao visitors were surveyed using Lao-language questionnaires, while Chinese tourists were given a Mandarin-language version of the survey. The English, translated Lao and Mandarin language versions of the were pre-tested with volunteers in Laos as well as back-translated against the original English version with both professional translators (Center Link Consulting, Ltd.) and guides who spoke multiple languages. The survey was also sent for review by external experts. Corrections, pretesting results and feedback were incorporated into the design of the final survey instruments.

The survey consisted of three parts. One part concentrated on respondents' value orientations (14 items), knowledge (6 questions) and attitudes towards wildlife, bears and bear bile (18 items). These responses were coded using both a five-point Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (5), and a “true” (1) and “false” (0) for knowledge questions (Manfredo et al., 2009; Teel et al., 2007). The second part of the survey contained closed-ended questions about respondent's bear part purchasing behaviors and preferences between wild bear bile, farmed bear bile and alternatives (Appendix 1). The bear part purchasing behavior questions were coded as (1) for an affirmative response (“I have bought bear parts”) and the qualitative written section was recorded verbatim. The bear bile preference question was coded separately, so that a respondent who ticked “wild bear bile” as their preference would be recorded as a (1) in that section, versus a respondent who ticked “synthetic bile” (0). The synthetic bile respondent would be recorded as (0) in the “wild bile” section, but (1) in the “synthetic bile” section. The third and final part of the survey was concerned with the socio-demographic attributes of the respondents surveyed. These included age, sex, level of education, area lived in, and religion. Lao respondents were sampled in September–October 2014, while Mandarin-speaking Chinese tourists were surveyed in April 2015.

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