The jaguar *Panthera onca* is threatened across much of its range, due to habitat loss, retaliatory killings, and poaching. Consequently, it is listed as near threatened on the IUCN Red List (Quigley et al., 2017). There is evidence of a growing trade in jaguar body parts across Latin America, particularly in Brazil, Bolivia, Suriname, Costa Rica, and Peru (Berton, 2018). For example, on February 23, 2018, two Chinese citizens were apprehended in Santa Cruz de la Sierra, Bolivia for possession of 185 jaguar teeth and three skins (Berton, 2018). Similarly, in Brazil at least 30 seizures of jaguar parts have occurred in the past 5 years (Berton, 2018).

In Southeast Asia, jaguar claws and teeth are worn as jewellery; their skins are bought for home decor; and a glue paste (made from boiled jaguar parts) is consumed to heal various ailments. Most organized trafficking appears to be by contractors working for foreign companies hired to hunt cats to export body part (Berton, 2018). With Latin America's current ayahuasca and shamanic tourist boom there are additional demands for jaguar products, which is our focus.

Each year, thousands of ayahuasca tourists travel to Peru, generating significant revenue for retreat centers that administer the brew (Fotiou, 2016). For example, a 2015 study found that in Iquitos, Peru's largest Amazonian city, 10 of the 40 largest retreats generated over USD 6.5 million annually (Álvarez, 2015). Ayahuasca is a traditional Amazonian medicine that has become a global phenomenon. It is a psychoactive brew made from the ayahuasca vine *Banisteriopsis caapi* and chakruna leaves *Psychotria viridis*. It is traditionally administered in ritualized shamanic ceremonies for both spiritual and physical healing; however, recreational users now ingest it for entheogenic experiences. It is the subject of extensive scientific research, global conferences, tourism, and even religious movements.
FIGURE 1  The three Peruvian cities where markets sold jaguar parts (8 locations total). Images 1 (an ayahuasca tourist with a newly-purchased jaguar tooth), 2 (jaguar teeth held by a local trader) and 4 (a jaguar skin held by a trader) were taken in the Passage Paquito section of Belen market, Iquitos; Image 3 (a village elder holds 3 jaguar paws) was shot in the Barrio Florido community, Punchana district, outskirts of Iquitos. Images 5 (teeth and a jaguar skull for sale in a craft market) and 7 (jaguar tooth pendants) were taken in Yarinacocha Market, Pucallpa. Image 6 (jaguar skin with shotgun pellet holes) was taken at the Clock Plaza of Pucallpa. Image 8 was shot in Lima, and shows jaguar, sea lion and caiman teeth in a small exhibit box. We also took images of two skins at the edge of the Momon River, Iquitos (Punchana district; Supplementary Information 1). Images by Steve Winter (2, 4 and 6), Alex Braczkowski (1, 3, 5 and 7) and Devlin Gandy (8). Total sample sizes for discussions with vendors, shamans and individuals engaged in the tourism industry are as follows: One trip in August 2019 by the second author, one trip by the third author in April 2019; and an earlier trip in August 2017 by the first, second, third, fifth and sixth authors to a) Pucallpa – 9 shamans (Mestizo, Ahaninka, and Shipibo-Conibo), 3 airport security guards tasked with searches of wildlife products, 3 local mediators, 1 veterinarian (San Juan Beer Company), five street-side shops (7 sellers), b) Lima – 2 small shops, c) Iquitos - approximately 14 sellers: 7 at Passage Paquito section of Belen market (one of them with 3 family members), 2 at Arteanal San Juan, 1 Barrio Florido community, 4 at the Boulevard. In addition there were 4 intermediaries who assisted in connecting the third author to vendors, 5 shamans, and 4 tourists interested in sessions with ayahuasca.
We present findings from investigations into the jaguar parts trade in local markets in Peru, considered a top tourist and ayahuasca tourism destination. We postulate that commercialized ayahuasca tourism may be an undervalued contributor to the trade.

1 | FINDINGS

Investigations were conducted between August 2016 and August 2019 in the cities of Lima, Iquitos, and Pucallpa (Figure 1). This information was collected while working on a story for National Geographic Magazine. Sales of items incorporating jaguar body parts to tourists were most prevalent in the Amazonian cities of Iquitos and Pucallpa. In Lima, a few jaguar fangs were found as “specialty items” at a curio a shop and at an open-air tourist market.

In Iquitos, jaguar skins ranged in price from S/.150 (Peruvian soles) to S/.500 (USD 49–152); a single paw could be purchased for S/.30 (USD 9). Jaguar skin purses were sold for S/.20 (USD 6); a stuffed jaguar head was priced at S/.100 to S/.300 (USD 30–91). Jaguar canines cost anywhere from S/.200 to S/.400 each (USD 61–122); two street vendors and a local trader in Pucallpa sold jaguar canine pendants for S/.250 to S/.330 each (USD 76–91). Prices for jaguar skins in Pucallpa and Iquitos were similar, selling at USD 80–200. Sellers were also willing to transport the skins internationally, using airport and customs agent contacts. We were approached repeatedly by local vendors to purchase jaguar body parts in touristic locations. In contrast, our team had to inquire specifically for jaguar body parts in less touristic areas, but still found them. We note that there are also decoys: South American sea lion Otaria flavescens, and caiman Melanosuchus niger teeth were being sold as jaguar fangs in both Lima and Iquitos.

Discussion with street-side vendors, shamans, and individuals working in the tourism industry (sample sizes are in Figure 1) revealed that jaguar canine pendants, jaguar skin bracelets, and other items are being sold to “enhance the ayahuasca experience” (Figure 1). This appears to be a case of rebranding, specifically using “ayahuasca marketing” for sellers to charge a premium on jaguar parts. Local indigenous shamans and healers from the Pucallpa area (Shipibo, Conibo, and Ashaninka ethnicities) denied the notion that jaguar parts enhance the ayahuasca experience for visiting tourists, and suggested that this practice is being marketed by “charlatan shamans” seeking financial gain from the ayahuasca boom.

East Asian demand for jaguar parts remains the main market (Berton, 2018; Plotkin, 2018) however, we suggest that the ayahuasca tourism industry is quickly becoming an important additional driver of poaching. We argue that the drivers behind all demand for these products in Peru and other ayahuasca tourism hubs must be investigated further, and recommend future research to identify the main buyers (Chinese nationals or tourists, and their countries of origin), and their motivation (memorabilia, ayahuasca ceremony or traditional Chinese medicine).

2 | SOLUTIONS

1. Government regulations—Peru has implemented a national anti-wildlife trafficking policy, which includes jaguar trafficking (Supreme Decret N° 011-2017-MINA GRI) that punishes wildlife traffickers with a prison sentence of 3–5 years (SERFOR 2017), as established in article 308 of the 2016 Peruvian penal code.

2. Education of tourists—a formal media campaign to educate ayahuasca tourists on the plight of wild jaguars, and discouraging them from buying jaguar parts is urgently needed.

3. Regulate and sensitize shamanic tourism operations—we suggest that a concerted effort to formalize ayahuasca tourism and educate both tourists and tour operators could play an important role in discouraging the trade in this niche market. The shamans we encountered in Iquitos and Pucallpa stressed the importance of the jaguar to the Amazon ecosystem and as a powerful totem in the spiritual world. The leadership of ayahuasca retreats could be important champions for jaguar conservation in Peru, Costa Rica, Colombia, Brazil, and other regions where ayahuasca is used, and they could discourage tourists from using jaguar parts.

4. Bettered enforcement—enforcement by local police is limited and sellers in Peru, and traffickers are finding ways to hide the products in warehouses, in the back of their stalls and other locations (Supplementary information 1). Bettered support and more resources are needed for anti-trafficking police in Peru.

ACKNOWLEDGMENT

The authors thank the National Geographic Society for supporting this work through their storytelling and science grant program.

CONFLICT OF INTEREST

The authors do not have any conflict of interest to declare.

AUTHOR CONTRIBUTIONS

A.B. conceived the manuscript and wrote the first draft with C.O.B., A.R., and F.S. contributed price data from markets. A.R., F.S., R.C., C.B., S.G., S.W. and D.G. helped write and
edit the second and third revisions of the manuscript. S.G. wrote the captions, and S.W. and A.B. took the photographs in the markets.

ETHICS STATEMENT
As our manuscript presents price data from openly accessible public markets in Peru it does not require ethical review. We also did not report on human or animal data. All formal permissions for this work were secured from the Boiling River Project, a Peruvian NGO working in the Pucallpa region, and formed part of a National Geographic Magazine Story (December 2017).

ORCID
Alexander Braczkowski https://orcid.org/0000-0002-0099-7803

REFERENCES
Álvarez, C. S. (2015). Ayahuasca, Iquitos and Monster Vorax. A multimedia book. Retrieved from http://www.ayahuascaiquitos.com/en/index.php

Berton, E. F. (2018). A journey into a black market for jaguar body parts in Latin America. Earth Journalism Network. Retrieved from https://earthjournalism.net/stories/jaguar-body-parts-in-the-black-market

Fotiou, E. (2016). The globalization of ayahuasca shamanism and the erasure of indigenous shamanism. Anthropology of Consciousness, 27(2), 151–179.

Plotkin, M. J. (2018). Progress on jaguar conservation in Suriname. Mongabay, 20 November.

Quigley, H., Foster, R., Petracca, L., Payan, E., Salom, R. & Harmsen, B. 2017. Panthera onca (errata version published in 2018). The IUCN Red List of Threatened Species 2017: e.T15953A123791436. https://doi.org/10.2305/IUCN.UK.2017-3.2LTS.T15953A50658693.en.

SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section at the end of this article.

How to cite this article: Braczkowski A, Ruzo A, Sanchez F, et al. The ayahuasca tourism boom: An undervalued demand driver for jaguar body parts? Conservation Science and Practice. 2019;1:e126. https://doi.org/10.1111/csp2.126