



AMERICAN MUSEUM OF NATURAL HISTORY

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## **NEW STUDY COMBINES BIOLOGY, ANTHROPOLOGY, AND ECONOMICS FOR A MORE COMPLETE PICTURE OF ILLEGAL WILDLIFE TRADE**

### **CONSERVATION BIOLOGISTS PROPOSE INTERDISCIPLINARY APPROACH TO AVOID ‘FIXES THAT FAIL’**

Wildlife trade represents a major threat to endangered species, especially in Southeast Asia, where illegal trade is widespread despite increased enforcement. In a new paper published today in the journal [BioScience](#), conservation biologists argue that better success in managing trade could come from taking an interdisciplinary approach: combining data from genetic studies, anthropological interviews, and economics.

“By merging all of these sources, we get a more nuanced picture that gives us site-specific advice for conservation managers and practitioners on the ground,” said Mary Blair, director of biodiversity informatics research at the American Museum of Natural History’s Center for Biodiversity and Conservation, who led the study along with Minh Le, a lecturer at Vietnam National University and research associate in the Museum’s Department of Herpetology. “If we only had one piece of the picture, we could give out incomplete advice, which might end up with what we call ‘fixes that fail.’”

The researchers took a closer look at the trade of key Southeast Asian species groups, including turtles, pangolins, muntjacs (barking deer), and slow lorises, small nocturnal primates that are the focus of Blair and Le’s collaboration. Analysis of DNA taken from pygmy slow lorises confiscated by Vietnamese authorities in northern Vietnam had suggested that the animals originated in southern Vietnam, while no animals that were confiscated in the south appeared to be coming from the north. The researchers inferred that animals were being trafficked from the south to the north of the country, and then possibly up to China and beyond. However, after speaking with key informants in the trade, they learned something unexpected.

“Based on our interviews, there is definitely trade going from central Vietnam to the south and out to other countries from there,” Blair said. “But we can’t capture that in the DNA, either because our sample size isn’t big enough or because we can’t tell the animals apart based on the genetic markers that we have used thus far.”

Economic information can also be a vital tool for protecting animals such as turtles and pangolins, which are under immense pressure from the rising demands of the international trade. As turtle and pangolin populations decline, their value in the trade is increasing at rates greater than inflation. Because of their rarity and high price, all pangolins and turtles caught in local villages are sold to traders for sale in urban or international markets. Therefore, data on the trade of these animals may not be able to tell researchers what’s happening locally.

The authors also argue that wildlife trade management recommendations meant for one particular species shouldn’t be applied to all, as they are likely influenced by different markets. “A plan devised for the Bengal slow loris might be different from what you should use for the pygmy slow loris,” Blair said. “You can’t assume that one practice will work for all.”

Other authors on this work include Gautam Sethi from Bard College, Thach M. Hoang and Nguyen T.H. Van from Vietnam National University, Mark Birchette from Long Island University, and George Amato and Eleanor Sterling from the American Museum of Natural History.

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*BioScience* paper: <https://doi.org/10.1093/biosci/bix113>

**AMERICAN MUSEUM OF NATURAL HISTORY (AMNH.ORG)**

The American Museum of Natural History, founded in 1869, is one of the world's preeminent scientific, educational, and cultural institutions. The Museum encompasses 45 permanent exhibition halls, including the Rose Center for Earth and Space and the Hayden Planetarium, as well as galleries for temporary exhibitions. It is home to the Theodore Roosevelt Memorial, New York State's official memorial to its 33rd governor and the nation's 26th president, and a tribute to Roosevelt's enduring legacy of conservation. The Museum's five active research divisions and three cross-disciplinary centers support approximately 200 scientists, whose work draws on a world-class permanent collection of more than 34 million specimens and artifacts, as well as specialized collections for frozen tissue and genomic and astrophysical data, and one of the largest natural history libraries in the world. Through its Richard Gilder Graduate School, it is the only American museum authorized to grant the Ph.D. degree and the Master of Arts in Teaching degree. Annual attendance has grown to approximately 5 million, and the Museum's exhibitions and Space Shows can be seen in venues on five continents. The Museum's website and collection of apps for mobile devices extend its collections, exhibitions, and educational programs to millions more beyond its walls. Visit [amnh.org](http://amnh.org) for more information.

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