

Rare, endangered insects and spiders illegally for sale online

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Brazilian salmon pink bird-eating tarantula (*Lasiadora Parahybana*) in the lab of Linda Rayor, senior research associate in CALS. Credit: Jason Koski/Cornell University

A survey has found that endangered and threatened insects and spiders, as well as common species that provide valuable ecological services, can be easily purchased—without adequate oversight—through basic internet searches, according to a new Cornell study.

For example, the Luzon peacock swallowtail, one of the rarest butterflies, which is listed as endangered both internationally and in the U.S., and is illegal to trade, was found for sale at Amazon.com pinned in a display box for around \$110.

Many species of live tarantulas, which are not threatened with extinction but whose trade is strictly controlled, were also readily discovered for sale as pets without any oversight or enforcement.

These results are concerning given that [insects](#) are in steep decline globally due to [habitat loss](#), pesticides, [invasive species](#), urbanization, pollution, and climate change. Some entomologists have estimated that the Earth is losing about 10 to 20% of all [insect species](#) every decade, and researchers said an insect or spider species' survival can be greatly impacted when it is collected and sold.

John Losey, professor of entomology and the lead author of the paper, "Insects and Spiders on the Web: Monitoring and Mitigating Online Exploitation of Species and Services," which published April 2 in the journal *Global Ecology and Conservation*, said the study began as a project for his Insect Conservation Biology course. The paper included 18 student co-authors who were undergraduates in 2019 when the research was done. Paul Curtis, extension wildlife specialist in the Department of Natural Resources and the Environment, is a senior co-author.

"We surveyed the web to determine if there were species available for sale that are rare, threatened, or for which commerce is in some way regulated," Losey said.

"As they get rarer and rarer, they become more and more valuable to collectors, and then the amount of collecting and sale, if not done sustainably, has greater impact on those species."

In the study, the student investigators began with independent broad searches to see what was out there. After gathering leads, the team formalized its process and divided searches across platforms—including Amazon, Ebay, Etsy and Alibaba, among others. They focused on vulnerable insect and spider species found on a few key lists.

These included the Convention on International Trade of Endangered Species of Flora and Fauna (CITES) lists, the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species and the U.S. Endangered Species List. The Luzon peacock swallowtail, for example, is on the U.S. Endangered Species List and CITES Appendix I, which denotes the most endangered species with the highest level of regulation; international trade of such CITES Appendix 1 species are generally prohibited.

In their searches, the team found 79 species listed across the three lists, including seven species on the IUCN's Red List, which names just the critically endangered. Among those were two stick insect species, a Gooty sapphire tarantula (*Poecilotheria metallica*) for sale for \$232.50, and a Cyprus beetle (*Propomacrus cypriacus*), which cost \$1,100 on eBay.

The most expensive insect they found for sale was a birdwing butterfly species named *Ornithoptera allottei*, listed on CITES Appendix 2. The pinned butterfly was listed on eBay for \$3,850 at the time of the search.

"It was really astonishing how easily endangered species are openly being sold online," said Juan Pablo Jordán, a student co-author who is now a doctoral student in the Department of Ecology and Evolutionary Biology. "It was also surprising how accessible the [endangered species] listings are to find and the complacency of the sale platforms that are essentially supporting the trade of at-risk species that are protected by law."

The students also found for sale species that provide ecological services, such as ladybugs released for [pest control](#) and pollinators. Such insects should be purchased through regulated sources, because releasing diseased insects, the wrong strain, or batches not suited to thrive in areas where they are released could impact larger [wild populations](#) and have negative effects on the services they provide.

"Hopefully, our findings will lead to better enforcement of the illegal online sale of rare insects and protect those species in the wild," Curtis said.

To that end, the study has been shared with the U.S. Fish and Wildlife Service, which enforces illegal trade of species but lacks the resources to monitor the commerce. Losey said he hopes to continue the project with student-specialists who monitor the web for illegal sales and report findings. For insects that provide services, the hope is to put them in the framework of "livestock," so their unregulated sale could then be monitored by the U.S. Department of Agriculture, Losey said.

More information: John E. Losey et al, Insects and spiders on the web: Monitoring and mitigating online exploitation of species and services, *Global Ecology and Conservation* (2022). [DOI: 10.1016/j.gecco.2022.e02098](#)

Provided by Cornell University

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