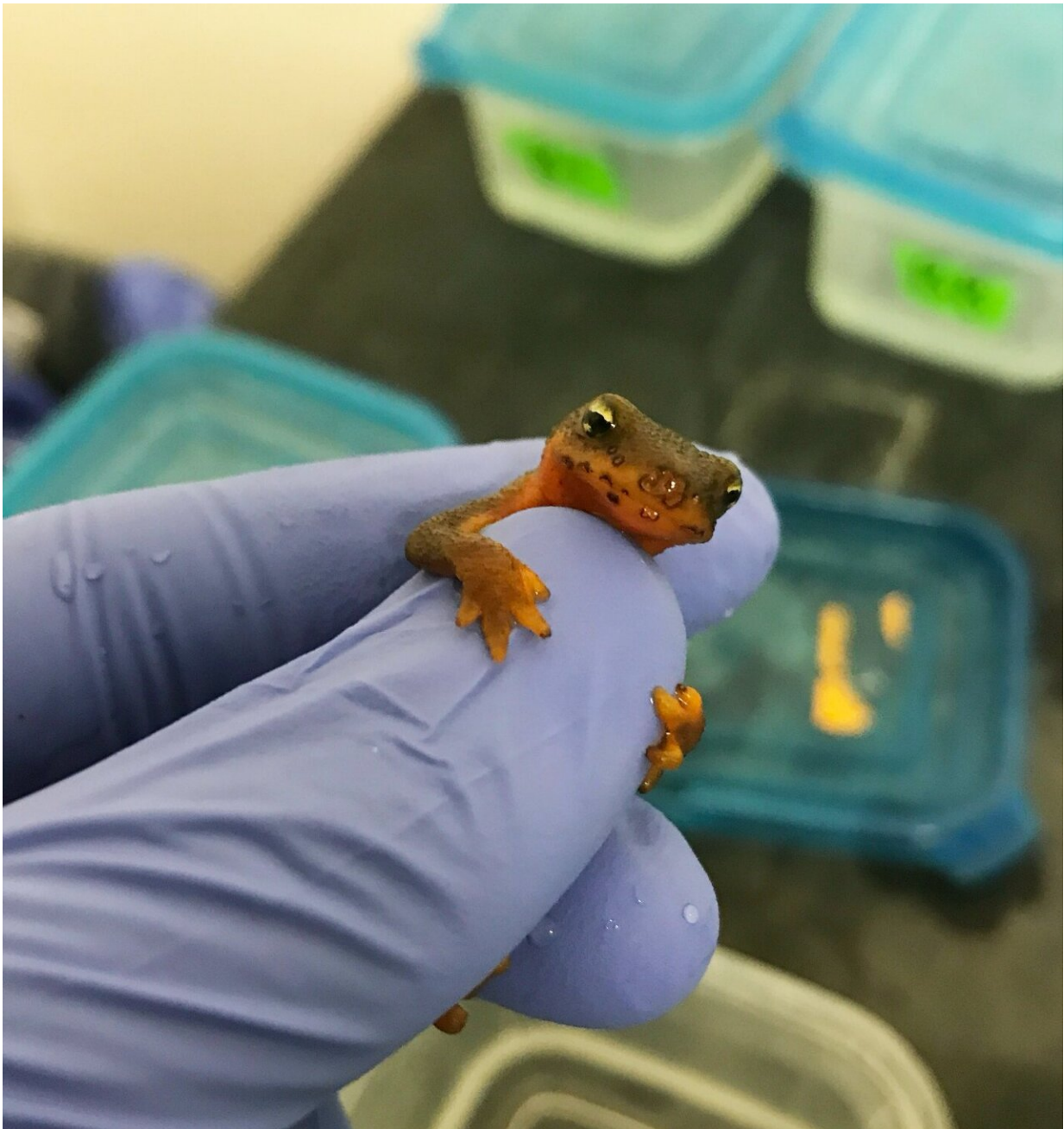


Novel early-detection method aims to stem disease spread in animal trade

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A research team recently studied rough-skinned newts as part of a project that developed a simplified method to detect a deadly fungus killing European salamanders. Credit: Jesse Brunner

A new [article published in the journal *Methods in Ecology and Evolution*](#) by researchers describes a simplified method to detect a deadly fungus killing European salamanders. The ability to rapidly find the fungus is significant as the disease, although not detected in the U.S., could impact the millions of amphibians and salamanders annually imported.

The fungal pathogen *Batrachochytrium salamandrivorans*, or Bsal, threatens salamander diversity. Initially identified in northern Europe, evidence suggests it was introduced from Southeast Asia via the pet trade.

"The impacts of Bsal in Europe have been idiosyncratic but include some of the most severe population declines we have witnessed," said Jesse Brunner, the study's principal investigator and Associate Professor at Washington State University. "A large, diverse group of researchers, government biologists, and amphibian lovers in the pet trade are working hard to avoid such devastating impacts."

Despite a temporary U.S. ban on importing about 200 salamander species, Brunner noted the researchers' focus is on preparing for potential arrivals and safeguarding amphibians. To address that concern, the research team developed a noninvasive method to quickly detect Bsal in shipments and captive settings, surpassing the conventional individual animal infection determination—this new method tests environmental DNA for Bsal DNA to assess the pathogen's prevalence.

"Our approach instead focused on detecting Bsal in a batch of animals in an aquarium or similar habitat if at least one of those animals were infected," he said. "This is the scale at which we can help inspectors at borders or workers in [pet trade](#) facilities establish, with some confidence, that Bsal is absent. It provides a way to make this essentially invisible pathogen visible."

More information: Jesse L. Brunner et al, Environmental DNA-based detection of pathogens in trade and captive settings: Best practices and validation for *Batrachochytrium salamandrivorans*, *Methods in Ecology and Evolution* (2023). [DOI: 10.1111/2041-210X.14217](https://doi.org/10.1111/2041-210X.14217)

Provided by Morris Animal Foundation

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