



A new study led by the Wildlife Conservation Society (WCS) identified a viral hotspot in Vietnam where bat roosting sites, bat guano harvesting, and pig farms are all in close proximity. The findings of this collaborative One Health study, described in the latest issue of the journal *Viruses*, have important implications for public health and wildlife conservation.

The authors say that the collection of guano—commonly used as a fertilizer—if not stopped entirely, should include the use of personal protective equipment for guano harvesters.

The research team, which consisted of experts from [animal health](#), public health, and the environment sector, collected over 1,600 animal and human samples from bat guano harvesting sites, natural bat roosts, and pig farming operations. They then tested for an array of viruses including coronaviruses, [influenza viruses](#), filoviruses and others.

They found significant viral diversity in bats, including CoVs closely related to ancestors of pig pathogens, at the human–animal interfaces targeted, as well as localized viral transmission among pig farms. The zoonotic spillover potential of the bat viruses identified in this study remain mostly unknown, as these viruses have not been fully characterized and their ability to jump species barriers has not been assessed.

Human samples were also tested to detect antibodies against eight virus groups. Limited human sampling did not detect any known zoonotic bat viruses in human communities living close to a bat cave where bat guano is harvested, but our other tests showed possible previous exposure to Marburg virus, Crimean–Congo hemorrhagic fever virus, and others.

In addition, the authors say the impact of bat guano harvesting on the conservation of bats and potential disruption of their critical role in the

broader ecosystem must be assessed. Bats act as pollinators and consume pathogen-carrying arthropods and agricultural pests and play a critical role in the health of people, animals, and ecosystems.

Said co-author Hoang Bich Thuy, and WCS Vietnam Country Program Director, "This study shows the risks of bat guano collection to the [public health](#), and the risk of viral spillover from [wildlife](#) into livestock and ultimately humans. Surveillance and early detection of viral hotspots are keys to preventing the next pandemic."

This study represents one of the first attempts to implement One Health surveillance in Vietnam which is located within a region characterized as a global hotspot for emerging infectious diseases.

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. Key to the One Health approach is a recognition that the health of people, livestock, wildlife, and the broader environment are all interconnected.

The authors point out the need to integrate wildlife expertise into future One Health surveillance planning and expand knowledge of wildlife systems (free range populations of wildlife, wildlife farming operations, and wildlife trade). Wildlife knowledge will be critical in the targeting of surveillance locations, interpretation of surveillance data, and development of interventions needed to prevent novel virus emergence as well as prepare for and respond effectively to the emergence of viruses with pandemic potential.

**More information:** Alice Latinne et al, One Health Surveillance Highlights Circulation of Viruses with Zoonotic Potential in Bats, Pigs, and Humans in Viet Nam, *Viruses* (2023). [DOI: 10.3390/v15030790](https://doi.org/10.3390/v15030790)

Provided by Wildlife Conservation Society

Citation: Surveillance in Vietnam highlights hotspots for viral disease emergence (2023, April 26) retrieved 11 May 2024 from

<https://medicalxpress.com/news/2023-04-surveillance-vietnam-highlights-hotspots-viral.html>

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