

Biogeographic barrier that protects Australia from avian flu does not stop Nipah virus

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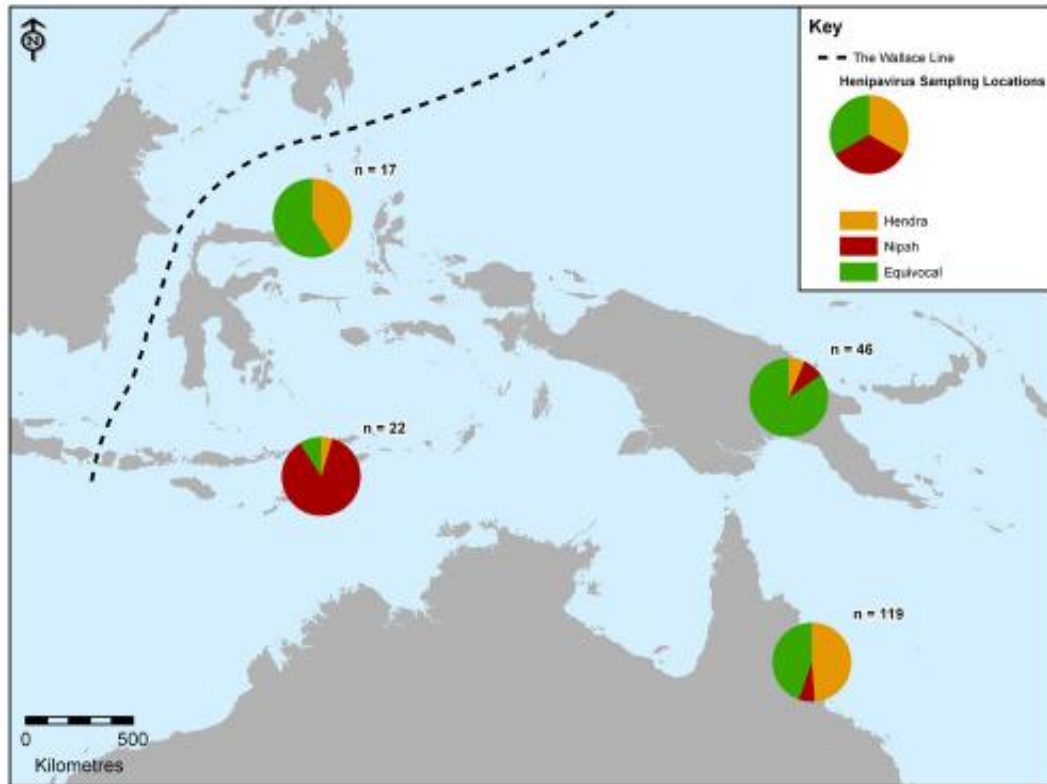
This is a black flying-fox (*Pteropus alecto*) ready for release following sampling in this study. This species occurs in Australia, Papua New Guinea and Indonesia. Credit: Andrew Breed

An invisible barrier separates land animals in Australia from those in south-east Asia may also restrict the spillover of animal-borne diseases

like avian flu, but researchers have found that fruit bats on either side of this line can carry Nipah virus, a pathogen that causes severe human disease. The findings are published April 24 in the open access journal *PLOS ONE* by Andrew Breed from the University of Queensland, Australia and colleagues from other institutions.

Previous studies have suggested that this biogeographic boundary, named Wallace's line, may have played a role in protecting Australia from the spread of the [avian flu](#) H5N1. In the current study, researchers assessed whether this boundary could restrict the distribution of Nipah virus, which has caused severe outbreaks of human and domestic animal disease in the past.

"We found evidence that Nipah Virus occurs on the eastern side of Wallace's Line and much closer to Australia than previously recognized," says Breed. "We also found that the epidemiology of Nipah virus, and related viruses, is complex and these viruses are not restricted to flying-foxes (Pteropus bats) in this region."



This is the Comparative Hendra Virus and Nipah Virus Neutralisation Test results from Cairns, Papua New Guinea, Sulawesi and East Timor. Credit: *PLoS ONE* 8(4): e61316. doi:10.1371/journal.pone.0061316

They found that [fruit bats](#) from regions on both sides of the line tested positive for Nipah virus and other related viruses called henipaviruses. Only certain species of fruit bats carried Nipah virus but even in their absence, other [bat species](#) could still carry these related viruses. Henipaviruses were also detected in some species not previously known to carry these viruses. Based on these results, the authors conclude that Wallace's line is not a restricting factor for the transmission of Nipah virus. Their results also extend the known regions where Nipah virus has been detected by over 2500 km, to the island of Timor.

More information: Breed AC, Meers J, Sendow I, Bossart KN, Barr

JA, et al. (2013) The Distribution of Henipaviruses in Southeast Asia and Australasia: Is Wallace's Line a Barrier to Nipah Virus? *PLoS ONE* 8(4): e61316. [doi:10.1371/journal.pone.0061316](https://doi.org/10.1371/journal.pone.0061316)

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