

## ARE FLYING FOXES A SIGNIFICANT RISK FOR INTRODUCING NIPAH VIRUS TO AUSTRALIA?

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Flying foxes (genus *Pteropus*, family Pteropodidae) are the natural hosts of several recently emerged zoonotic viruses of animal and human health significance in Australia and Asia. These include the novel paramyxoviruses Hendra virus and Nipah virus. Two of the putative natural hosts of Nipah virus (*Pteropus vampyrus* and *P. hypomelanus*) are widespread in the Indomalayan archipelago and parts of New Guinea, where their ranges overlap with two species that occur in Australia (*P. alecto* and *P. conspicillatus*).

The extent of contact between the Australian populations and those in New Guinea and Indonesia is unknown, although seasonal movement between New Guinea and northern Australia is evident. Previous studies of Australian flying fox species suggest a high level of gene flow between populations and individual flying foxes are known to be capable of travelling great distances.

This study aims to:

- Establish the geographic distribution of Nipah virus infection in flying fox populations in the Australian pre-border and border regions.

- Establish the level of contact between flying fox populations in the pre- and post-border regions.

Methods used involve:

- Molecular genetic investigation of the population structure of *P. alecto* throughout its range in Australia, Papua New Guinea and Indonesia.

- Satellite telemetry of flying foxes pre- and post-border.

- Targeted serology of flying fox populations to establish the distribution of Nipah virus in pre-border and border populations.

Current findings from this study will be presented and discussed in terms of the risk of the introduction of Nipah virus to Australia via flying foxes.