Leibniz Institute for Zoo and Wildlife Research

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Stability of Altered Forest Ecosystems

Do anthropogenic disturbances of habitats promote the transmission risk for viruses?

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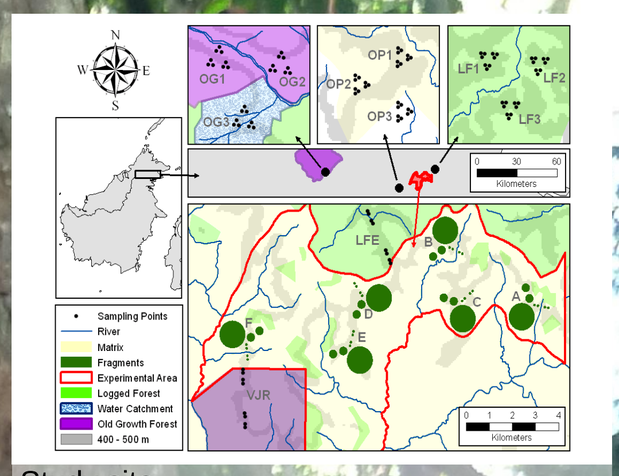
Background: ecological vs. physiological drivers

- Most emerging infectious diseases are of zoonotic origin (Jones et al. 2008)
- Anthropogenic land use (e.g. deforestation) may promote transmission risk of pathogens across species barriers by an increased contact zone – "ecological drivers" (Field et al. 2001; Breed et al. 2006)
- Do physiological drivers (such as health status, e.g. chronic stress) affect viral prevalence and shedding ?



Study site

Study site

- Sabah, Malaysia within the SAFE project (**S**tability of **A**ltered **F**orest **E**cosystems)
- Sampling along a gradient of increasing level of anthropogenic disturbance:

selectively logged forest → currently logged forest → fragmented forest


Kerivoula intermedia

Methods

- Study species: in total 8 species of the families Rhinolophidae, Hipposideridae and Vespertilionidae
- Assess health status and immune functions of individuals (ratio forearm length : mass, viral diseases, level of chronic stress, immunoglobulins, bacterial killing ability)

Harp trap to capture bats


Taking measurements on the forearm length


Taking an oral swab for virus detection


Taking a blood sample for immunological analyses

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Pictures: „Study site": www.safeproject.net; „*Kerivoula intermedia*" and „Harp trap": Anne Seltmann, all others: Rajeev Pillay