



PMAC | PRINCE MAHIDOL
AWARD CONFERENCE **2018**



PARALLEL SESSION 3.4

**SHIFTING LANDSCAPES - REAL AND FIGURATIVE: UNDERSTANDING HOW
ALTERED LAND USE IS DRIVING DISEASE EMERGENCE**



| BACKGROUND

From urban growth to natural resource extraction and agricultural intensification, anthropogenic land use change is leaving an indelible mark on the planet. Globally, from 2000 - 2012, net forest cover loss totaled 1.5 million square kilometers, 32% of which occurred in tropical rainforest ecosystems. This radical alteration in our natural environment is contributing to an acceleration in the pace and diversity of vector-borne and zoonotic disease emergence, as humans, their livestock, and wildlife are placed into increasingly greater contact. This session will provide a forum for exploration of the mechanics of land use change-associated zoonotic disease emergence and novel, practical solutions to address this challenge.

| OBJECTIVES

- Understanding the various pathways that are transforming landscapes—from agricultural intensification to extractive industries and infrastructure development—as economically driven
- Enhanced understanding of the mechanisms through which land use change enables infectious disease emergence and/or re-emergence, including inter-related factors of biodiversity and human population change dynamics
- Reviewing the data on how various land use scenarios—including fragmentation of wildlife habitats—are linked to both vector-borne and non-vector-borne zoonotic disease transmission dynamics
- Highlighting proven models for addressing land use-associated disease emergence



Speaker

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Serge Morand focuses his research on the evolutionary ecology of disease transmission and health ecology. Field parasitologist, he is concerned at the role of biodiversity as risks and insurance for zoonotic emerging infectious diseases and antimicrobial resistance raise. During the last 10 years he conducted more than 30 field trips in Southeast Asia (Thailand, Cambodia, Laos, Vietnam, Philippines). He is conducting several projects on the impacts of global changes, including climate and land use changes, on the links between biodiversity, health and societies in Southeast Asia, using rodent-borne diseases as a model, CERoPath and BiodivHealthSEA, with the last one FutureHealthSEA. He published articles and edited special issues and books on this topic, with the last ones "Socio-ecological Dimensions of Infectious Diseases in Southeast Asia" (2015 Springer Singapore); "Biodiversity Conservation in Southeast Asia: Challenges in a Changing Environment" (2017 Routledge London) and "Biodiversity and Health: Linking Life, Ecosystems and Societies" (2017 Elsevier, London). Serge Morand belongs to the French CNRS and CIRAD, he is based in Thailand at the Faculty of Veterinary Technology (Kasetsart University), and also Invited Professor at the Faculty of Tropical Medicine (Mahidol University).