

# 3<sup>rd</sup> International Forum on Sustainable Future in Asia

## 3<sup>rd</sup> NIES International Forum

### Session 2 Biodiversity



Session Coordinator: Manabu Onuma (NIES)



# SUSTAINABLE DEVELOPMENT GOALS



Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Forests cover 30 per cent of the Earth's surface and in addition to providing food security and shelter, forests are key to combating climate change, protecting biodiversity and the homes of the indigenous population. Thirteen million hectares of forests are being lost every year while the percentage of land that is degraded has led to the desertification of 3.6 billion hectares.

**12 targets**

Deforestation and desertification are major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification.

# Targets relating to forest and biodiversity in Goal 15

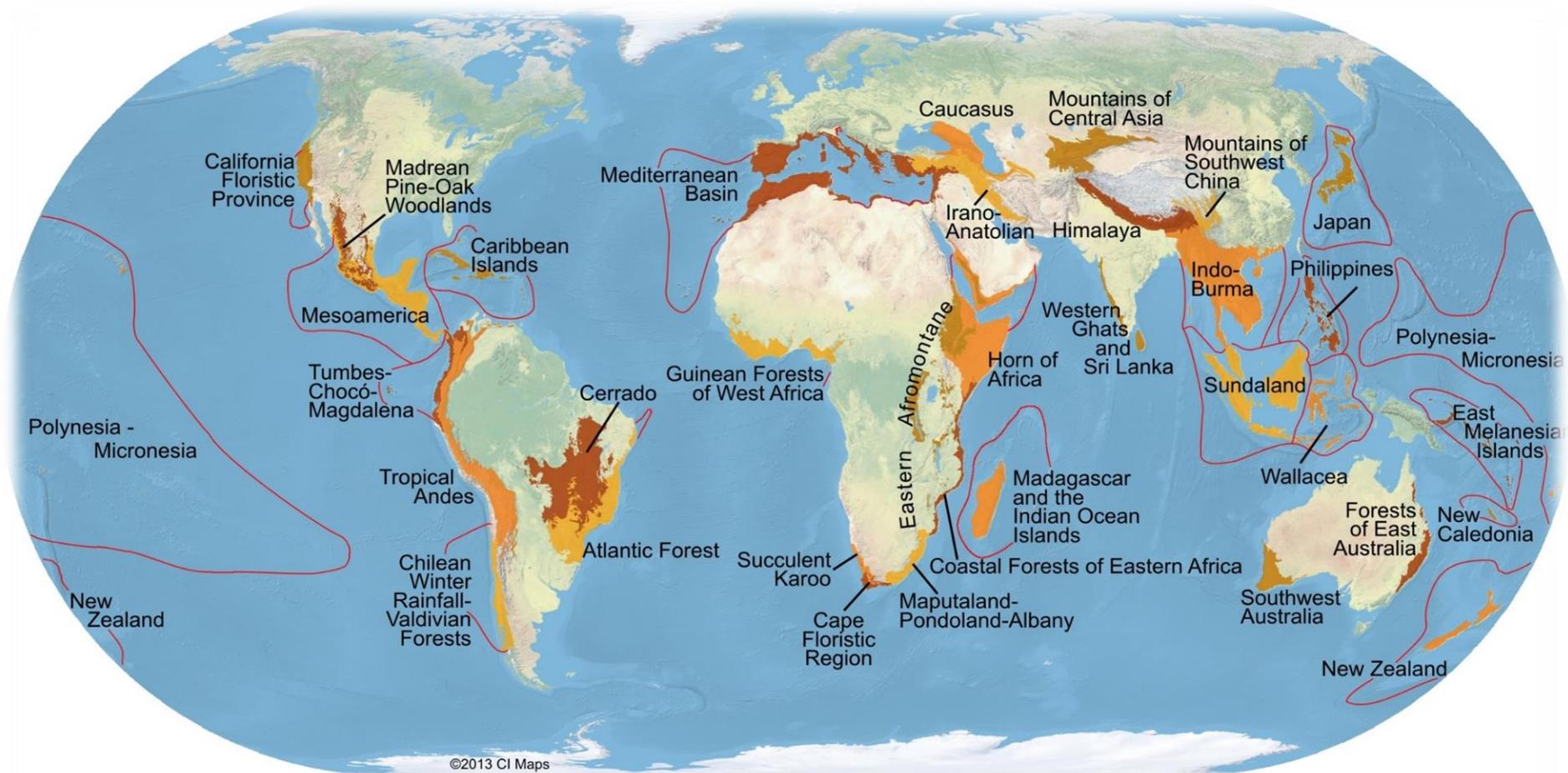
By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

# Biodiversity Hotspots



[http://www.conservation.org/global/japan/PublishingImages/35\\_hotspots\\_labelled.jpg](http://www.conservation.org/global/japan/PublishingImages/35_hotspots_labelled.jpg)

Extensive camera trapping research to evaluate the biodiversity of Pasoh Forest Reserve Dr. Manabu Onuma (NIES)

Methods of Monitoring Populations of the Rajah Brooke's Birdwing, *Trogonoptera brookiana* (Lepidoptera, Papilionidae) Ms. Phon Chooi Khim (FRIM)

Characterizing tropical forest canopy structure by UAV-SfM  
Dr. Yayoi Takeuchi, (NIES)

Habitat-related tree species distributions and diversity in a peninsular Malaysian rainforest Dr. Yao Tze Leong (FRIM)

Improving Connectivity through Sustainable Landscape Management  
Ms. GAN Pek Chuan (UNDP)

Strengthening Wildlife Enforcement Monitoring and Establishing Asia-Africa Link  
Mr. Manesh Lacoul (AIT)

Thailand's effort towards addressing illicit trafficking of wildlife  
Ms. Klairoong Poonpon (DNP)

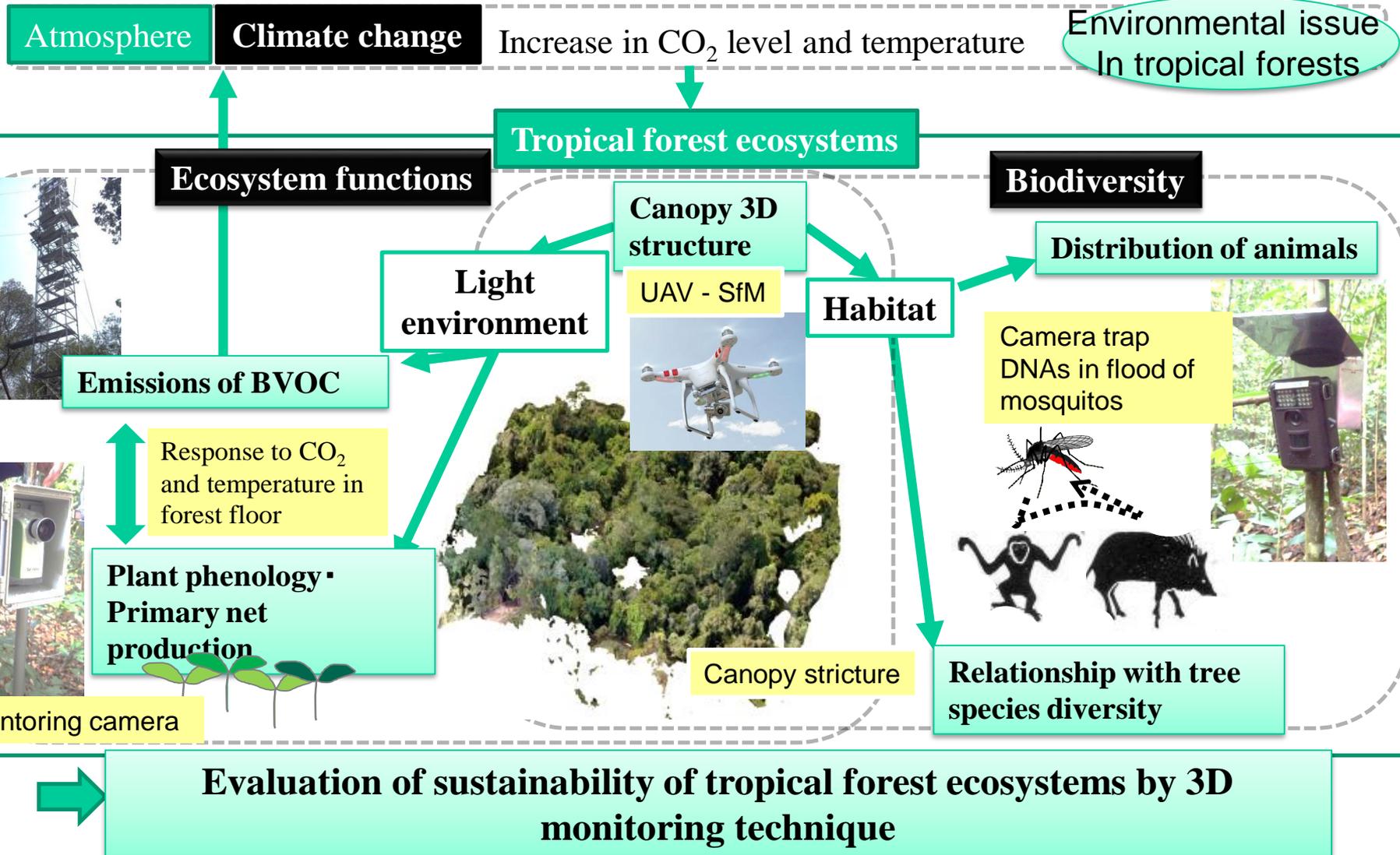
**Extensive camera trapping research to evaluate the biodiversity of Pasoh Forest Reserve**



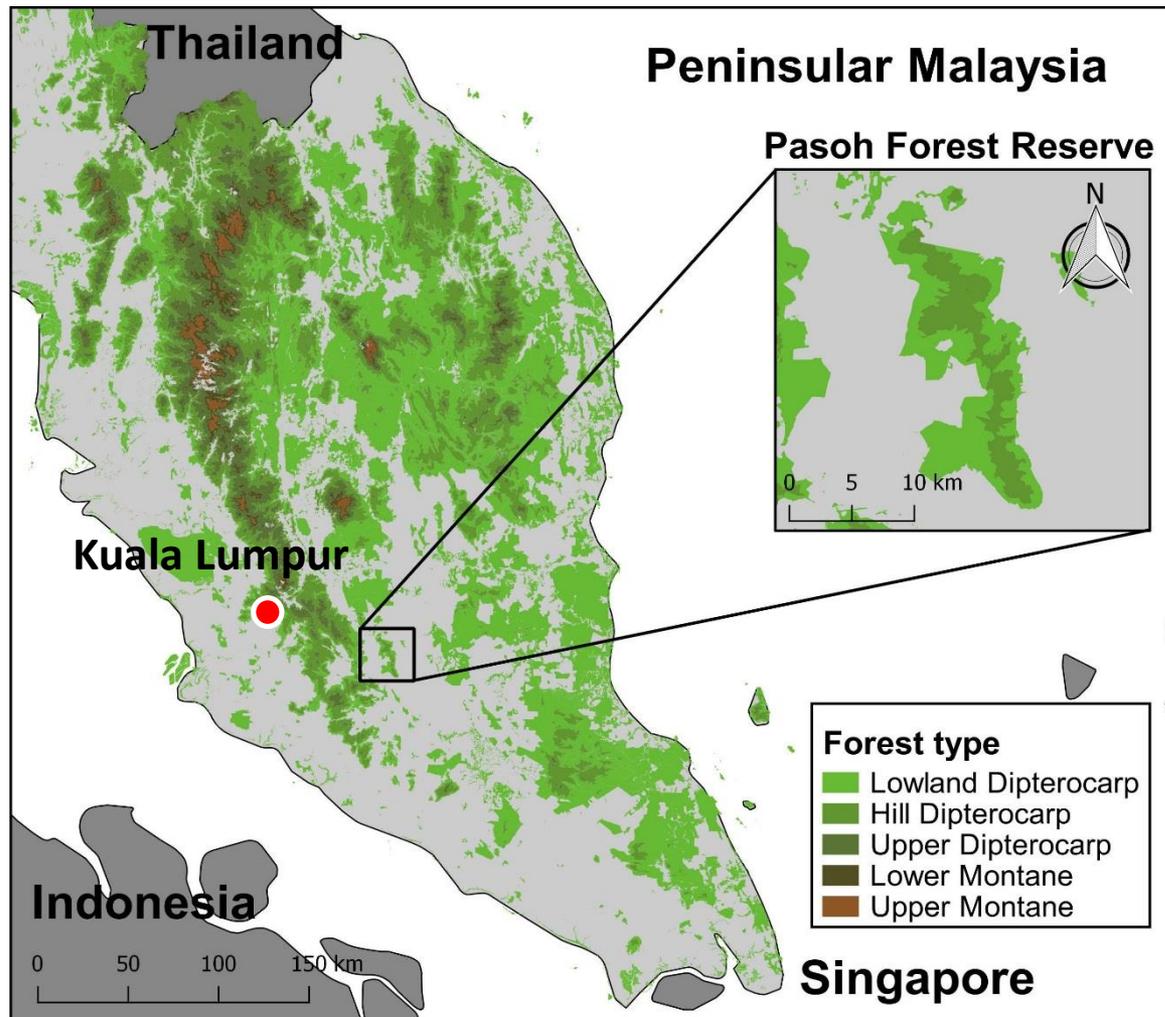
**Manabu ONUMA (NIES)**

# Development of methodology for species and functional diversity assessment in Southeast Asian tropical forests using high-resolution 3D monitoring technique (2016-2018)

~Toward understanding the feedback mechanism of climate change to tropical forest ecosystems~



# Pasoh Forest Reserve



## Location

70 km southeast from Kuala Lumpur  
(2°98'N 102°31'E)

## Area

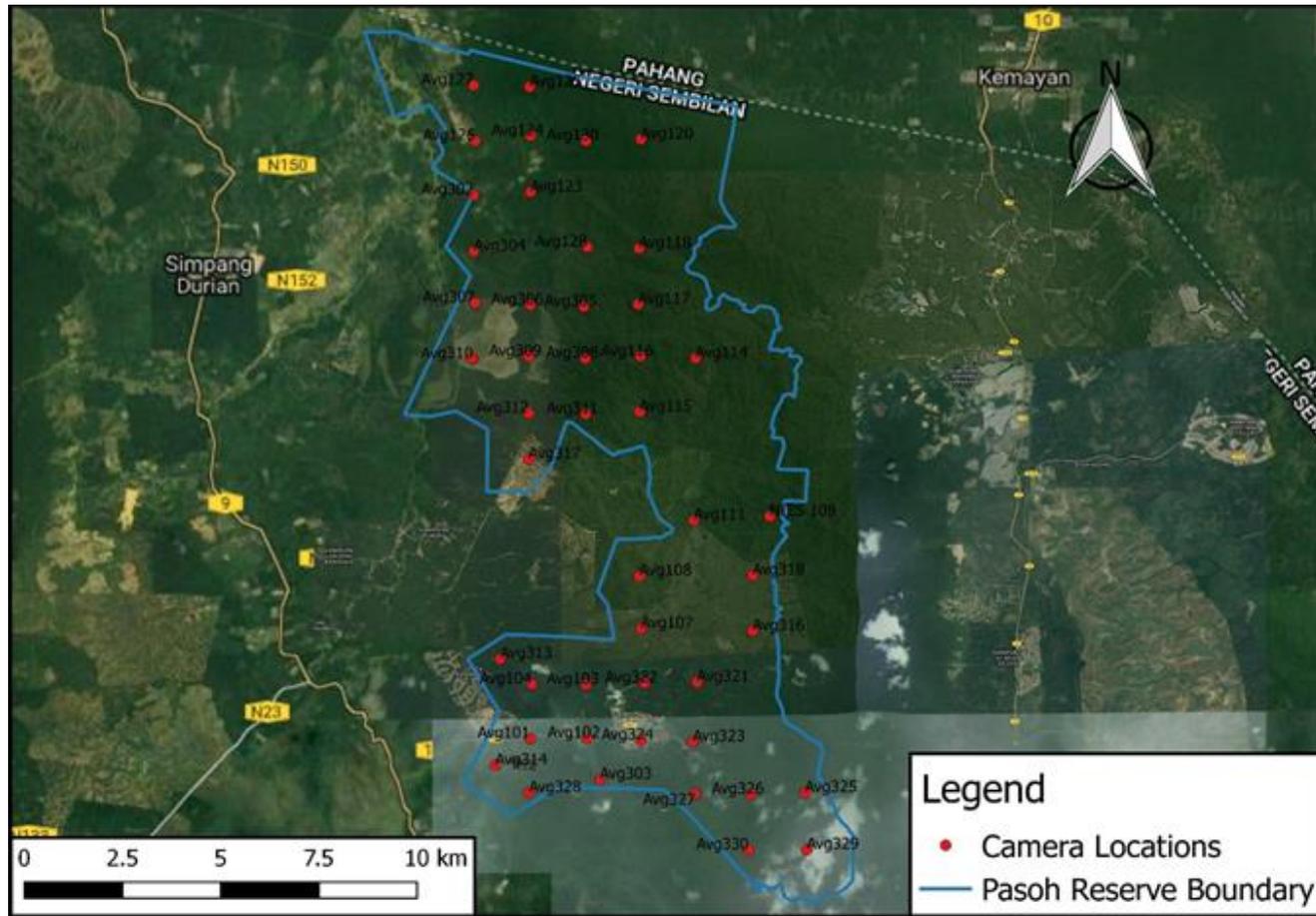
approximately 140 km<sup>2</sup> surrounded by oil palm and rubber plantations.

## Vegetation

Mainly consists of hill dipterocarp forest (Regenerating secondary Forest)

Continual selective logging since 1950's

# Method



No. of cameras: **50**  
Bushnell TROPHYCAM (Model 119636)  
**2km interval**

Period :  
May, 2016 – March, 2017

# Result

**46 species** were observed in 138,700 photos.

IUCN category	Threatened*			NT (6)	LC (25)	? (5)	Total (46)
	CR	EN	VU				
Mammal	1	1	7	5	15	4	33
Avian				1	9	1	11
Reptile		1			1		2

## \*Threatened species

CR	Sunda Pangolin	<i>Manis javanica</i>
EN	Malay Tapir	<i>Tapirus indicus</i>
EN	Burmese Mountain Tortois	<i>Manouria emys</i>
VU	Clouded Leopard	<i>Neofelis nebulosa</i>
VU	Leopard	<i>Panthera pardus</i>
VU	Sumatran Serow	<i>Capricornis sumatraensis</i>
VU	Sun Bear	<i>Helarctos malayanus</i>
VU	Binturong	<i>Arctictis binturong</i>
VU	Sambar	<i>Rusa unicolor</i>
VU	Southern Pig-tailed Macaque	<i>Macaca nemestrina</i>

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**EN Malay Tapir**

EN Burmese Mountain Tortois

VU Clouded Leopard

VU Leopard

VU Sumatran Serow

**VU Sun Bear**

**VU Binturong**

VU Sambar

**VU Southern Pig-tailed Macaque**

*Manis javanica*

***Tapirus indicus* (Reproduction)**

*Manouria emys*

*Neofelis nebulosa*

*Panthera pardus*

*Capricornis sumatraensis*

***Helarctos malayanus* (Reproduction)**

***Arctictis binturong* (Reproduction)**

*Rusa unicolor*

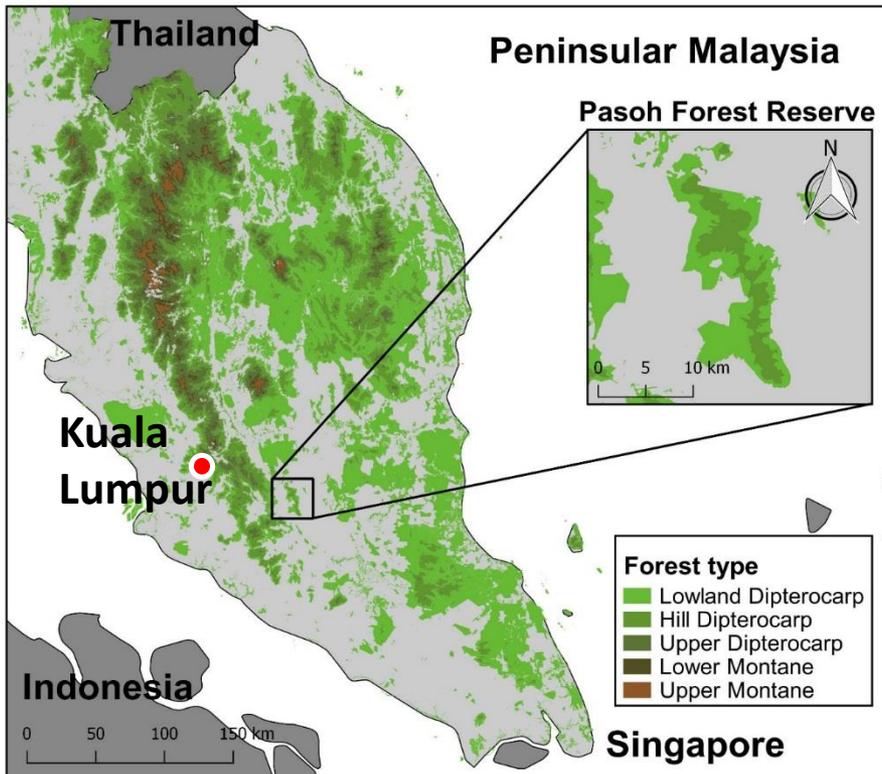
***Macaca nemestrina* (Reproduction)**

# Further research

Continual **selective logging** since 1950's



Sustainable forest management cases to maintain the **biodiversity of large mammal species?**



# Acknowledgments

Dr S. Christine Fletcher (FRIM)

Mr Jonathan Moore (University of Nottingham Malaysia Campus)

All of Pasoh staffs

