

Phylogeography and systematic of the timber wood of *Pometia* endemic to biodiversity hotspot of the tropical lowland forest of West Papua

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Background

The general lowland eco-region in West Papua is made up of 2 terrestrial eco-regions: Southern New Guinea lowland rain forests; and Vogelkop-Aru lowland rain forests. These area are important biodiversity hotspots harboring a unique vascular plants in Indo-Malaysia with an amazing assortment of plants (over 1,200 species of trees) many of them found only on this island. This specialized lowland flora is highly vulnerable to environmental changes as predicted by logging activities and land use for development leaves them nowhere to go. Currently there is no baseline data to provide information about genetic diversity of the *Pometia* trees' populations of these habitats, the extent of gene flow between them, and the putative location of past refugia.

Genetic diversity has great influence on species resilience to environmental change. Mapping the genetic diversity among the timber tree populations will contribute to a more evaluation of the standing stock and accurate evaluation of the treat of overexploitation whilst providing evidence with which to reconstruct the biogeographic history and identify key of refugial area of high conservation priority. Further more, species delimitation in this group is often problematic and needs t be re-evaluated based on robust molecular evidence.



Aims

This project will investigate lowland top tree species using sensitive molecular marker systems (AFLP) and species distribution modelling under past and future climate to:

1. Resolve phylogeographical patterns and assess genetic diversity across the region
2. Evaluate species delimitation
3. Reconstruct the historical biogeography to identify past refugia and areas of high conservation priority

Hypothesis

Lowland rainforests is a 'sea' of warm forest habitat surrounding wet tropics mountain tops 'islands' of cool in the tropical regions. Dispersal between lowland species may not be restricted for specialised taxa which can have significant evolutionary consequences of:

1. Phylogeographic structure is expected for taxa where gene flow between lowland is unrestricted
2. Pattern of genetic and morphological variation will show sufficient congruence to revive taxonomic concepts
3. Distribution under projected future environmental changes will be considerably contracted impacting genetic diversity and gene flow within and between populations.



Acknowledgements

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Phylogeography and taxonomy of Timber Wood of *Pometia* spp. endemic to biodiversity hotspot of the tropical lowland forests of West Papua

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Background

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This area are important biodiversity hotspots harbouring a unique vascular plants in Indo-Malaysia with an amazing assortment of plants (over 1,200 species of trees) many of them found only on this island. This specialized lowland flora is highly vulnerable to environmental changes as predicted by logging activities and land use for development leaves them nowhere to go. Currently there is no baseline data to provide information about genetic diversity of the *Pometia* trees' populations of these habitats, the extent of gene flow between them, and the putative location of past refugia.

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This is to certify

Jacob Manusawai

Attended

The Systematics without Borders Conference

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1 – 4 December 2013

and presented the poster

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endemic to biodiversity hotspot of the tropical lowland forests
of West Papua***

On behalf of the Organising Committee