

# **The spatial pattern of soil-dwelling termites in primary and logged forest in Sabah, Malaysia**

## **Abstract**

1. Primary and logged lowland dipterocarp forest sites were sampled for subterranean termites using soil pits located on a grid system in order to detect any patchiness in their distribution.

2. A spatial pattern in termite distributions was observed in the primary and logged sites, but the response differed between soil-feeding and non-soil-feeding termites.

3. Spatial analysis showed that soil-feeding termites were homogeneously distributed in the primary forest but significantly aggregated in the logged forest. This pattern was reversed for non-soil-feeding termites and may result from differences in resource provisioning between the two sites.

4. Gaps in termite distribution comprised a greater area than patches for both feeding groups and sites, but gaps dominated the logged site.

5. A significant association between soil-feeding and non-soil-feeding termite distributions occurred at both sites. This arose from an association between patches in the primary forest and between gaps in the logged forest.

6. Termite spatial pattern was optimally observed at a minimum extent of 64 m and lag of 2 m.

7. The spatially explicit SADIE (Spatial Analysis by Distances IndicEs) analyses were more successful than (non-spatially explicit) multivariate analysis (Canonical Correspondence Analysis) at detecting associations between termite spatial distributions and that of other biotic and abiotic variables.