

## **Quantification of termite attack on lying dead wood by a line intersection method in the Kabili-Sepilok Forest Reserve, Sabah, Malaysia**

### **Abstract**

A line intersection method was used to estimate abundance (technically linear abundance:  $m^1 m^{-2}$ ), biovolume ( $m^3 ha^{-1}$ ) and size class distribution (defined by diameter) of lying dead wood in tropical forest. Additional semi-quantitative protocols assessed decay state (4 classes), termite attack (5 classes) and live termite occupancy (3 classes). Three forest types (kerangas, alluvial and sandstone) were sampled in the Kabili-Sepilok Forest Reserve of Eastern Sabah, using plots of  $30 \times 30$  m. Approximately 50 man-hours were required per site, at a replication of three plots per site and three well-separated sites per forest type. Mean biovolume of lying dead wood exceeded  $8 \times 10^3 m^3 ha^{-1}$  in kerangas (= heath) forest, with lower values in other types. Large items (> 19 cm diameter) were less than 10% of total abundance, but represented the largest biovolume, exceeding (alluvial) or equalling (kerangas) the total biovolumes of smaller categories combined. Most items (not less than 75%) were present as small wood (< 10 cm diameter). Items in the highest decay class had the highest biovolume. Termite attack was greater in the kerangas, where nearly 90% of items showed evidence of consumption, compared with 58% in the alluvial and 40% in the sandstone forests. Over 40% of items in the kerangas contained live termites compared with 25% in the alluvial and 15% in the sandstone. Items in the highest attack class (= almost total internal destruction) represented about one-half of the total biovolume available in the alluvial and kerangas forest types, and about one-third in the sandstone.