

**Background:** Tree species composition at the landscape scale is often tightly associated with underlying soil type in tropical forests. Changes in soil type may have effects on forest structure that drive changes in both light and soil resource availability, since light availability in the understorey tends to be lower in more fertile sites. Plant functional traits may determine species distributions across gradients of light and soil resource availability.

**Aims:** To test whether tree species with contrasting distributions exhibit leaf traits that reflect adaptation to the resources most limiting in their native environment.

**Methods:** We measured foliar nutrient concentrations, stomatal density, leaf  $\delta^{13}\text{C}$  values, leaf mass per area, and leaf lifespan for saplings of nine common dipterocarp species at Sepilok Forest Reserve, Malaysian Borneo, possessing varying associations to soil resource habitats.

**Results:** Species specialised in their adult distribution to nutrient-poor sandstone soils had traits indicative of a nutrient conservation strategy. Species specialised to more fertile alluvial soils had a wider spectrum of leaf N and P concentrations and LL, reflecting greater variance in strategies for resource acquisition and use among species in this habitat.

**Conclusions:** Understorey light regimes co-vary with soil type, and both light and soil resource availability influence leaf trait adaptations that may contribute to species–habitat associations.