

## **A revised conservation assessment of Dipterocarps in Sabah**

### **ABSTRACT**

Borneo has experienced a rapid decline in the extent of forest cover, which has reduced the amount of habitat available for many plant and animal species. The precise impact of habitat loss on the conservation status of dipterocarp trees is uncertain. We use three contrasting techniques, the extent of occurrence, area of occupancy and ecological niche models derived using maxent, in conjunction with a current land-use map of Sabah, to derive estimates of habitat loss and infer a regional IUCN Red List conservation status for 33 Sabah dipterocarp species. Estimates of habitat loss differed significantly according to the methods employed and between species on different habitat types. Proportion of habitat loss determined from the ecological niche models varied from 21 percent for *Shorea micans* to 99.5 percent for *Dipterocarpus lamellatus*. Thirty-two of the 33 dipterocarp species analyzed in this study would have their Sabah populations classified as Threatened (equal to a habitat loss of > 30%) under the A2 IUCN Red List criterion. Dipterocarps that occur in lowland forests have experienced greater habitat loss than upland/lower montane or ultramafic species. In addition, species with the lowest predicted area within their historic distributions had the highest proportion of habitat lost, which provides a rationale for targeting conservation effort on the species with narrow distributions. We recommend the ecological niche modeling approach as a rapid assessment tool for reconstructing species' historic distributions during conservation assessments of tropical trees.