

## **Characteristics of night sleeping trees of Proboscis monkeys (*Nasalis larvatus*) in Sabah, Malaysia**

### **Abstract**

Primates spend about half of their lives at sleeping sites, and their choice of sleeping sites may affect individual survival. We identified a total of 88 trees used by proboscis monkeys (*Nasalis larvatus*) as night sleeping sites on 16 nights from June to September 2008 in riverine, mangrove, and mixed mangrove–riverine forests along the Garama River, a tributary of the Klias River, in the west of Sabah, Malaysia. We recorded 11 variables for each tree, including the species, physical structure, distance from the riverbank, and connectivity with surrounding trees. We compared sleeping trees with 114 trees with  $\geq 30$  cm girth at breast height (GBH) located  $\leq 50$  m of the riverbank in 8 botanical plots (total 1 ha). Trees in the plots represented the general vegetation patterns of the study area. Choice of sleeping trees did not depend on the tree species. Although sleeping trees included trees  $\leq 46$  m from the river, those closer to riverbanks (5–35 m,  $n=76$ ) were more likely to be used as sleeping sites. Compared to the available trees, sleeping trees had larger trunks (mean $\pm$ SD=143.6 $\pm$ 56.9 cm GBH), and were taller (mean $\pm$ SD=34.3 $\pm$ 8.1 m), with greater number (median=6; range=12) and larger (mean $\pm$ SD=24.1 $\pm$ 15.2 cm circumference) main branches. They were also located near to other trees, with overlapping branches, creating good arboreal connectivity. Choice of sleeping trees by proboscis monkeys is likely to be related to risks of predation and injury from falling, as well as ease of social interaction and efficiency of locomotion.