

**Fecal Nutrients Suggest Diets of Higher Fiber Levels in Free-Ranging than in Captive Proboscis  
Monkeys (*Nasalis larvatus*)**

**ABSTRACT**

Understanding the natural diet of species may provide useful information that can contribute to successful captive maintenance. A common problem experienced with captive foregut-fermenting primate (colobine) diets is that they are deficient in fiber and therefore highly digestible. This may contribute to gastrointestinal disorders often observed in zoos. An approach to obtain information relevant for the improvement of diets is to compare the nutrient composition of feces from free-ranging and captive individuals. In theory, fecal material can be considered a proxy for diet intake integrated over a certain period of time. We collected fecal samples from eight free-ranging proboscis monkey (*Nasalis larvatus*, a highly endangered colobine species) groups from a secondary forest along the Kinabatangan River and four from a mixed mangrove-riverine forest along the Garama River, Sabah, Borneo, Malaysia. We also collected fecal samples from 12 individual captive adult/sub-adult proboscis monkeys from three different zoos. We confirmed that feces from free-ranging monkeys contained more fiber and less metabolic fecal nitrogen than those from captive specimens, indicating a less digestible diet in the wild. Modifying the diets of captive colobines to include more fiber, comparable to those of free-ranging ones, may contribute to their health and survival.