# Power to detect trends in ecological indicators in the East Usambara Mountains, Tanzania


## Authors

William D. Newmark,
R. B. M. Senzota



## Abstract

We evaluated the statistical power of monitoring protocols to detect, over a 10-year period, trends in indices of abundance of primates, hornbills and forest interior dung beetles and growth rates of epiphytic ferns in the Amani Nature Reserve, in the East Usambara Mountains, Tanzania. Local technicians are responsible for the day-to-day gathering of data. The existing monitoring protocols for blue monkey, silver-cheeked hornbills, trumpeter hornbills, forest interior dung beetles and *Asplenium nidus* have sufficient statistical power (>0.80) to detect trends of 65% or less over a 10-year period. Monitoring protocols for black and white colobus and *Asplenium holstii* have lower statistical power (<0.80). We therefore conclude that the majority of monitoring protocols of the East Usambara Ecological Monitoring Project have the capacity both logistically and statistically to detect long-term trends in important functional groups in the East Usambara Mountains.