

**The effect of habitat fragmentation on the bats of Kakamega forest, western Kenya** By  
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Habitat loss and fragmentation are major threats to biodiversity, especially in tropical rainforests, where both biodiversity and deforestation rates are high. Too little is known about the effects of such perturbations on bats in Africa, although they have received considerable attention in the Neotropics. We investigated effects of forest fragmentation on bat assemblages at Kakamega Forest, western Kenya, based on captures at edge and interior locations in three forest fragments of Buyangu (3950 ha), Kisere (400 ha) and Malava (100 ha), presenting a spectrum of forest area and human-use regimes. Basal area, tree density and intensity of human use were used as predictors of bat abundance and species richness. A total of 3456 mist-net hours and 3168 harp-trap hours resulted in the capture of 4983 bats representing 26 species, 8 families and 4 foraging ensembles (frugivorous bats, insectivorous bats of the forest interior, insectivorous bats of the forest edge and insectivorous bats of open space). Frugivorous bats were frequently captured using the edges of the larger, better protected forests, but they also utilized the interior of the small, more open Malava forest significantly more than less disturbed, denser, and more closed forests. In contrast, captures indicated that the forest-interior insectivorous ensemble or narrow-space foraging species (forest specialists) predominated in the interiors of the larger forests, but they completely avoided the smaller fragment. Canonical Correspondence Analysis showed that canopy cover, basal area and tree density positively influenced forest specialists whereas frugivorous bats were positively related with human-use indicators. On these bases, specialist species appear to be especially vulnerable to forest fragmentation.