

Abstract of the Dissertation

**Micromammal Paleocology: Past and present relationships
between African small mammals
and their habitats**

by

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In this dissertation I explore the relationship between micromammal assemblages created by owls and their correspondence with local environment and habitats. The underlying question examined by this dissertation is what can be inferred about the habitat from these taphonomic assemblages, and how strong are the inferences?

The relationship between faunal assemblages created by owls and the habitat in which they were generated is an important component for interpreting fossil micromammal assemblages, which occur in many of the same sites as fossil hominoids and inform our understanding of hominoid adaptation to changing environmental and climatic conditions.

I conducted field research in the Serengeti National Park, Tanzania and the surrounding protected areas. Bone assemblages from sixty-one owl roosting sites were collected, and a subset of these was treated to detailed faunal analysis.

The land cover and habitats of the study area were examined by ground surveys and through the use of satellite imagery. Land cover maps derived from the satellite imagery were combined with data from printed maps into a geographic information system (GIS) for analysis.

Observations were also made on the roosting behavior of two owl species in the study area -- the Barn Owl, *Tyto alba* and the Spotted Eagle Owl, *Bubo africanus* -- with implications for the taphonomy of the assemblages each species creates.

Differences in the spectrum of micromammal abundances are found to be informative of subtle changes in land cover and habitat across the study area. Patterns in the faunal composition of the assemblages are used to examine standard methods of paleoenvironmental reconstruction such as the taxonomic habitat index (THI), and species diversity. Finally published data on the fossil microfauna from Bed I of Olduvai Gorge are examined in light of the modern data.