

OR125*Taxonomic and functional beta diversity of montane ant communities***Tom Rhys Bishop**, Mark Robertson, Berndt van Rensburg, Catherine Parr

Ants (Hymenoptera: Formicidae) are a dominant and ubiquitous group in nearly all terrestrial systems. Consequently, understanding ant beta diversity, variation in the composition of their communities, is a key goal for ecologists and conservationists. Whilst there is a body of literature describing differences in ant communities across spatial or environmental gradients, three key areas require further study. Firstly, in which ways do communities differ? Compositional differences can be due to complete species turnover or to nested patterns where a species poor community is simply a subset of a richer one. This distinction has important consequences for our understanding of which processes are driving community assembly, yet is rarely made for ants. Secondly, do changes in functional traits mirror those seen for species identity? If there is high functional redundancy among species within a region, then high taxonomic beta diversity may simply be the product of stochastic processes, rather than deterministic assembly rules. Thirdly, how do ant communities vary through time? Single instances of sampling give us only a snapshot of the patterns and processes shaping ant communities. We attempt to address these gaps in the ant ecology literature by utilising a spatially and temporally extensive community dataset, morphological and physiological functional traits and a new method for partitioning taxonomic and functional beta diversity into turnover and nestedness components. This will not only allow us to better understand the altitudinal ecology of southern African ants, but will give us greater insight into the mechanisms shaping ant communities in general.