

Abundance and Diversity of Macrofungi in Ranomafana National Park, Madagascar.

Fungi are a vital part of many ecosystems, but with poorly understood habitat requirements and habitat degradation happening at an unprecedented rate, studying the patterns of fungi biodiversity is essential to ascertain what regions of the world may be conservation priorities. The aim of this study was to evaluate potential differences in fungal diversity and abundance between primary and secondary rainforests in Ranomafana National Park, Madagascar and assess whether one forest type should be of higher conservation priority. Sixteen 5 m x 5 m plots in each forest type were searched thoroughly for macrofungi and specimens were identified down to their non-phylogenetic morphological group. The morphological group diversity (Shannon Index) and abundance of macrofungi was calculated for each plot. In total, 10 distinct morphological groups were found in Ranomafana. The primary forest had a significantly higher abundance of macrofungi (830) as compared to the secondary forest abundance (462); however, this difference could be the result of differing weather conditions during sampling. There was no significant difference observed in macrofungi morphological group diversity between the primary and the secondary forests, but morphological groups may not have been a fine enough level of identification, as 9 of the 10 morphological groups were ubiquitous across both forests. While additional long term sampling is needed to more precisely assess the macrofungi biodiversity patterns of Ranomafana National Park, it can be concluded that both the primary and secondary forest are vital habitat for macrofungi, and have the abiotic and biotic conditions necessary to support a high level of fungi diversity. Additional controlled experiments are also suggested to focus on the causal and correlative factors influencing diversity of macrofungi in forest ecosystems.

Key terms: macrofungi, alpha diversity, primary forest, secondary forest, morphological group