

Ferns species richness patterns and their environmental preferences across elevational gradient on Mount Trus Madi, Sabah, Malaysia

ABSTRACT

Elevational species richness studies in Borneo have overlooked Mount Trus Madi even though it is the second highest summit in the island. This study intends to elucidate the pattern of fern species richness along the elevational gradient of Mount Trus Madi. The environmental preferences of ferns in this mountain were studied with sampling efforts along the mountain's north-western slope. The survey recorded 11 species at 1000 m, 18 species at 1400 m, 29 species at 1800 m, 23 species at 2200 m and 14 species at 2600 m above sea level respectively. The study showed ferns species richness was very high at the intermediate elevation and decreased towards the highest and lowest elevation. However, terrestrial ferns showed a deviation from this trend, in which species richness decreased with elevation. The enumerated ferns are largely epiphytic and has shown a strong affinity towards moderate temperature and forest canopy cover at intermediate elevation. Ferns on this mountain are divisible into high-elevation and low-elevation assemblages. New discoveries from this study will enable ecologists to better understand the elevational species richness patterns of ferns in Borneo.