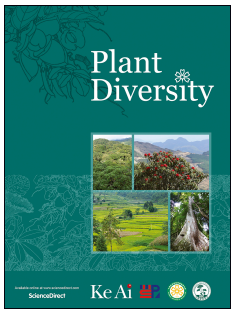
Accepted Manuscript



Soil seed banks along elevational gradients in tropical, subtropical and subalpine forests in Yunnan Province, southwest China

Xiaqin Luo, Min Cao, Min Zhang, Xiaoyang Song, Jieqiong Li, Akihiro Nakamura, Roger Kitching

PII: S2468-2659(17)30036-7

DOI: 10.1016/j.pld.2017.10.001

Reference: PLD 85

To appear in: *Plant Diversity*

Received Date: 3 March 2017

Revised Date: 10 September 2017

Accepted Date: 12 October 2017

Please cite this article as: Luo, X., Cao, M., Zhang, M., Song, X., Li, J., Nakamura, A., Kitching, R., Soil seed banks along elevational gradients in tropical, subtropical and subalpine forests in Yunnan Province, southwest China, *Plant Diversity* (2017), doi: 10.1016/j.pld.2017.10.001.

Soil seed banks along elevational gradients in tropical, subtropical and subalpine forests in Yunnan Province, southwest China

Xiaqin Luo [a, b], Min Cao [a, *], Min Zhang [a], Xiaoyang Song [a, b], Jieqiong Li [a], Akihiro Nakamura [a], Roger Kitching [c]

[a] *Key Laboratory of Tropical Forest Ecology, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, 666303, Yunnan, China*

[b] *University of Chinese Academy of Sciences, 100049, Beijing, China*

[c] *Griffith School of Environment and Environmental Futures Research Institute, Griffith University, Nathan QLD 41 11, Brisbane, Australia*

[*] *Corresponding author: Min Cao,* caom@xtbg.ac.cn

Abstract

Soil seed banks are a vital part of ecosystems and influence community dynamics and regeneration. Although soil seed banks in different habitats have been reported, how soil seed banks vary with elevational gradients in different climatic zones is still unknown. This paper investigates seed density, species composition and nonconstituent species of forest soil seed banks in Yunnan Province, southwest China. Similarity between the soil seed bank and standing vegetation was also examined. We collected soil samples from sites spanning 12 elevations in tropical rain forests, subtropical evergreen broad-leaved forests and subalpine coniferous forests, and transported them to a glasshouse for germination trials for species identification. The soil seed banks of tropical and subtropical forests had much higher seed densities and species richness than those of subalpine forests. Seeds of woody species dominated