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# Seed Dispersal and Predation Across a Grassland-Forest Ecotone in Southern Palawan, Philippines

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**Abstract**

In many regions of South-East Asia, anthropogenic grasslands have replaced the original forest vegetation, particularly in the Philippines. Attempts to restore a tree cover, have been many-fold and often unsuccessful. Given the high percentage of zoochorous species among woody pioneers in the Philippines, animals as seed dispersers and seed predators are likely to play a major role in the natural succession of grassland. These animals, however occur in much higher densities in woodlands compared to ecosystems widely lacking woody vegetation.

Using seed traps and artificial exposure of protected and unprotected seeds, we compared quantitatively seed precipitation and post-dispersal seed predation in grassland and forest as a function of the distance to the ecotone. Humidity, day-temperature close to the ground and fine root density were measured at each seed trap station.

Seed precipitation was highest within woodland and gradually decreased in grassland with increasing distance to the forest. Seed predation was highest close to the ecotone and lower within forest and grassland. Humidity was lower and day-temperature was higher in grassland compared to forest. Density of fine roots was significantly higher in grassland than in forest.

Lack of seed dispersal could not explain the arrested succession in grassland. Seed predation may reduce tree recruitment, particularly close to the ecotone. Other factors, like microclimate or root competition are likely contributing to the low recruitment of woody plant seedlings.

This implies that rehabilitation of such areas by natural means cannot be expected in a comprehensible time frame, but needs interventions by man, which help woody plants to establish and thus to regain ecological and economic productivity.

**Keywords:** Arrested succession, grassland, land rehabilitation, natural succession, seed predation, seed dispersal

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