

## ANT GENUS ASSEMBLY IN DIFFERENT TYPES OF REFORESTATION IN THE SOUTHERN AMAZON

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### SUMMARY

Given the growing concern over the loss of biodiversity associated with deforestation, reforestation appears as an alternative for biodiversity recovery. This study describes and compares the richness and composition of ant genera among active pastures, mature forests, and three reforestation strategies, in addition to natural regeneration forming secondary forests (Capoeiras) at Fazenda São Nicolau, Cotriguaçu, Mato Grosso. Sampling was conducted between December 2024 and January 2025 in six vegetation types: Native Forest, Capoeira, Fig, Mixed, Teak, and Pasture. Six plots were selected for each vegetation type. In each plot, 10 pitfall traps were installed, spaced 25 meters apart. As a preliminary analysis, we evaluated the total and mean genus richness per sampling point (alpha diversity), as well as community composition. Mixed Reforestation presented the highest total genus richness (38), followed by Capoeira and Fig (34), Native Forest (33), Teak (27), and Pasture (20). Alpha diversity reflected this pattern, with higher values in the Forest and reforestation with native species, while Teak and Pasture showed fewer species per point. Genus composition varied substantially among environments. Native Forest stood out for the presence of *Holcaponera*, *Alfaria*, *Acropyga*, and *Ochetomyrmex*. Among the most common genera, we observed *Pheidole*, *Solenopsis*, and *Wasmannia*. In Pasture, the exclusive genera were *Poneracantha*, *Oxyepocus*, *Pogonomyrmex*, and *Tapinoma*, specialists in open and simplified habitats. Dominant genera included *Acromyrmex*, *Brachymyrmex*, *Cyphomyrmex*, *Pheidole*, *Solenopsis*,

and *Pseudomyrmex*. Faunal overlap between Pasture and Teak involved 15 shared genera, corresponding to about 55% of Teak's fauna and 75% of Pasture's. The overlap between Pasture and the other reforestations was low. On the other hand, the most promising reforestations, Mixed and Fig, as well as Capoeira, shared with the Forest 25, 21, and 24 genera, respectively. The conversion of forest into pastures and Teak plantations, widely used in the region, resulted in a reduction in ant diversity, with communities composed mostly of species adapted to more open and simplified environments. In contrast, reforestations such as Mixed and Fig, along with Capoeiras, which present a noticeably denser understory, proved more efficient in recovering forest-associated fauna, due to the greater similarity in genus composition. These results highlight the importance of adopting restoration strategies that recover natural conditions, contributing to the conservation of ant diversity and the ecosystem services they provide in the Amazon region.

**Keywords:** Reforestation; Southern Amazon; Biodiversity recovery; Ants

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