

Diversity and Distribution Patterns of Medium to Large Mammals in a Silvicultural Landscape

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INTRODUCTION AND OBJECTIVES



Fig. 1. Maned wolf (*Chrysocyon brachyurus*)



Fig. 2. Giant Ant-eater (*Myrmecophaga tridactyla*)

The production rate and economic value of *Eucalyptus* has driven its rapid expansion in Brazil¹, which is currently about 7 Mha². *Eucalyptus* plantations have been referred to as 'green deserts'. However, previous studies have shown that fauna diversity is well represented within agriculture and silviculture landscapes^{3,4}.

The goal of this project was to determine the diversity and distribution patterns of medium to large-sized mammals inhabiting a silvicultural landscape in São Paulo, Brazil.



Fig. 3. Puma (*Puma concolor*)

MATERIAL AND METHODS

- **Study Area:** Núcleo Angatuba/PPBio (Fig. 4);
- **Sampling Methodology:** based on RAPELD with a gride⁵ (Fig. 4) of 15 sampling units (5 in each type of habitat – *Eucalyptus*, abandoned pasture and native vegetation), where camera traps Bushnell Trophy Cam® were installed from July 2015 to March 2016;
- **Analytical Methodology:** we compared the silviculture landscapes environments in terms of TD (taxonomic diversity), PD (phylogenetic diversity) and FD (functional diversity).

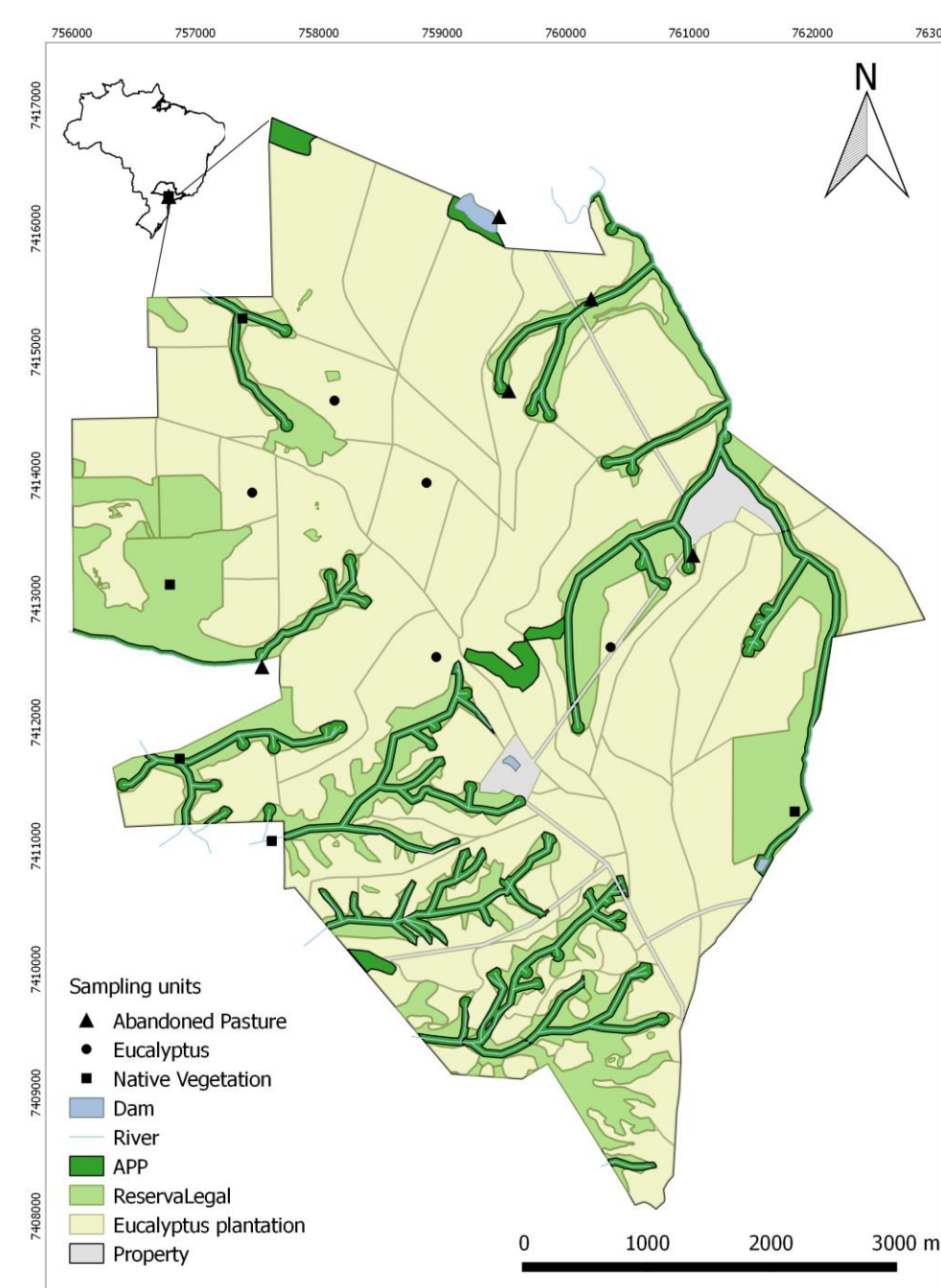


Fig. 4. Três Lagoas Farm, São Paulo, Brazil

RESULTS AND DISCUSSION

- **Species Diversity:** 18 medium to large sized mammals were detected (16 native and 2 exotic/invasive species);
- **ANOVA:** comparison of habitats types in terms of taxonomic, phylogenetic and functional diversity (Fig.5) did not show variance between habitats, demonstrating that those mammals use all environments within the silvicultural landscape;
- **Distribution Patterns:** correspondence analysis (Fig. 6) shows that component 1 separates highly modified environments (i.e. *Eucalyptus* and abandoned pasture) from the more pristine areas (i.e. native vegetation with different levels of conservation). Component 2 divides the landscape between the matrix (i.e. *Eucalyptus*) and Areas of Permanent Protection (APP)/ Legal Reserve (LR) (i.e. native vegetation and abandoned pasture).

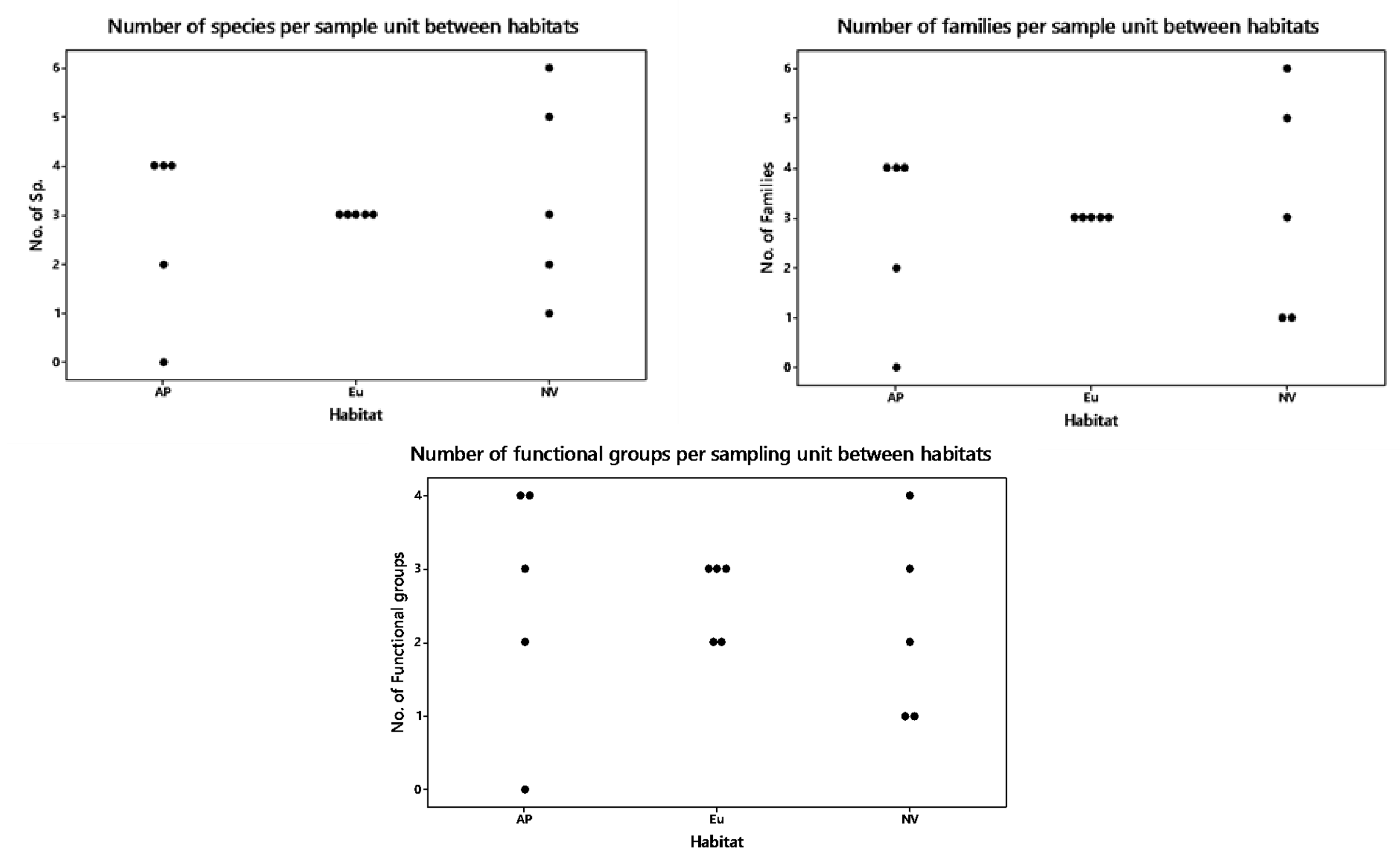


Fig.5. Relationship between diversity (TD, PD and FD) of medium to big mammals with the environments that composes the *Eucalyptus* plantation ($F < 0.500$, $p > 0.100$, $df = 14$).

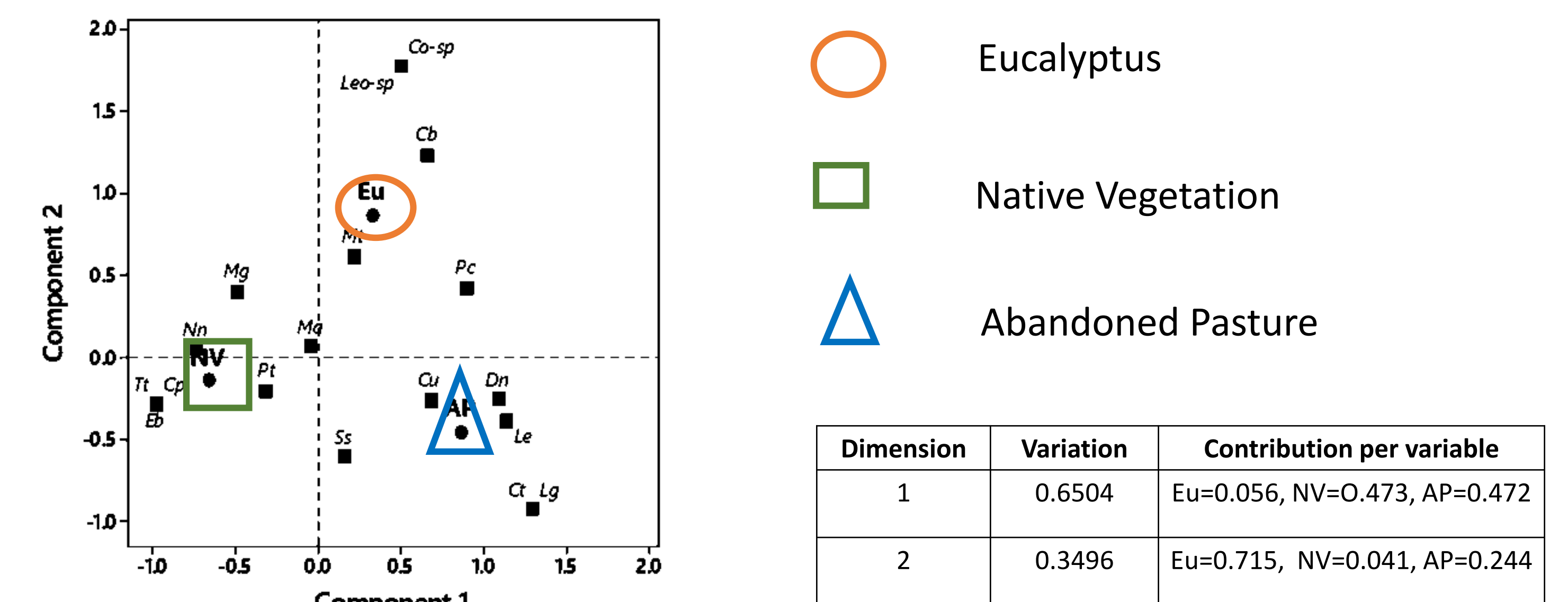


Fig. 6: Correspondence analysis. Species abbreviations: **Predators:** Cb – *Chrysocyon brachyurus*, Ct – *Cerdocyon thous*, Eb – *Eira barbara*, Leo-sp – *Leopardus sp.*, Lg – *Leopardus guttulus*, Pc – *Puma concolor*; **Preys:** Cp – *Cuniculus paca*, Cu – *Cabassous unicinctus*, Co-sp – *Coendou sp.*, Dn – *Dasyus novemcinctus*, Le – *Lepus europaeus*, Ma – *Mazama americana*, Mg – *Mazama gouazoubira*, Mt – *Myrmecophaga tridactyla*, Nn – *Nasua nasua*, Pt – *Pecari tajacu*, Ss – *Sus scrofa*, Tt – *Tamandua tetradactyla*.

CONCLUSIONS

- Medium to large mammals are well represented within this silvicultural landscape;
- The preservation of conservation areas (i.e. APP e LR) within these landscapes is fundamental to the enhancement of local conservation of big mammals;
- The use of space by big mammals in silvicultural landscapes appears to be influenced by its trophic structure, with predators more associated with the open areas and their preys with APP and RL;
- Future studies should prioritize the reintroduction of locally extinct species and monitoring biodiversity, with the aim of rapidly detecting possible impacts caused by changing in the land use and agricultural practices used within the matrix.

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Aknowledgements:

