

Local extinctions of primates: demographic and genetic effects on vegetation

Laurence Culot¹ and Mauro Galetti¹

¹ Universidade Estadual Paulista (UNESP), Laboratório de Biologia da Conservação (LaBic), Rio Claro, SP, Brazil

Combining with a high deforestation rate, poaching in the rainforests threatens most plant and animal populations. Primates, by constituting 25-40% of frugivore biomass in the tropics, are not spared since poaching targets mostly large and medium mammal herbivores, seed dispersers or seed predators. Local primate extinctions may alter plant-animal interactions through reducing the number and the outcome of seed dispersal events, yet few studies have measured this impact along a defaunation gradient. Therefore, cascading effects on the demographic and spatial genetic structure of plant populations are expected, especially for large-seeded species needing large seed dispersers. This study aimed at determining the consequences of defaunation - focusing on large primates – on the recruitment dynamics and spatial genetic structure of a large-seeded species, *Cryptocarya mandioccana* (Lauraceae), along a defaunation gradient in the Brazilian Atlantic Rainforest. Specifically, we intend (1) to determine the contribution of each seed disperser (*Brachyteles arachnoides*, *Alouatta guariba*, and *Aburria jacutinga*) to the recruitment dynamics of *C. mandioccana* during two successive years; (2) to link the seed disperser occurrence and contribution to *C. mandioccana* recruitment to the spatial genetic structure. First results indicate that seed predation effect overcomes seed dispersal effect, resulting in high seedling recruitment success in the most defaunated site despite short dispersal distances. Results from the genetic data will inform if this apparent positive demographic effect does not hide a negative genetic effect: the decreasing of gene flow and genetic diversity, leading to a pronounced spatial genetic structure of *C. mandioccana* populations in defaunated areas.