

Landscape factors and allochthonous congeneric species influence *Callithrix aurita* occurrence in Brazilian Atlantic Forest remnants

Natasha Loureiro¹, Vanessa Guimarães-Lopes¹, Flávio Rodrigues¹, and Rodrigo Lima Massara²

¹Federal University of Minas Gerais

²Universidade Federal de Minas Gerais

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Abstract

The buffy-tufted-ear marmoset (*Callithrix aurita*) is a small primate endemic to the Brazilian Atlantic Forest biome, and one of the 25 most endangered primates in the world, due to fragmentation, loss of habitat, and invasion by allochthonous *Callithrix* species. Using occurrence data for *C. aurita* from published data papers, we employed model selection and cumulative AICc weight (w+) to evaluate whether fragment size, distance to fragments with allochthonous species, altitude, connectivity, and surrounding matrices influence the occurrence of *C. aurita* within its distributional range. Distance to fragments with *C. jacchus* (w+ = 0.94) and non-vegetated areas (w+ = 0.59) correlated negatively with *C. aurita* occurrence. Conversely, the percentage of agriculture and pasture mosaic (w+ = 0.61) and the percentage of savanna formation (w+ = 0.59) in the surrounding matrix correlated positively with *C. aurita* occurrence. The findings indicate that *C. aurita* is isolated in forest fragments surrounded by potentially inhospitable matrices, along with the proximity of a more generalist and invasive species, thereby increasing the possibility of introgressive hybridization. The findings also highlighted the importance of landscape factors and allochthonous congeneric species for *C. aurita* conservation, besides indicating urgency for allochthonous species management. Finally, the approach used here can be applied to improve conservation studies of other endangered species, such as *C. flaviceps*, which is also endemic to the Brazilian Atlantic Forest and faces the same challenges.

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