

LANDSCAPE CONNECTIVITY DIFFERENCES IN BLACK LION TAMARINS (*LEONTOPITHECUS CRYSOPIYGUS*) AND UNGULATES ACROSS THE FRAGMENTED LANDSCAPE OF THE PONTAL REGION, BRAZIL

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Animal movement studies have demonstrated species variability in response to fragmentation through differences in landscape connectivity. These differences are a product of an organism's ability to perceive landscape heterogeneity and the heterogeneity of the landscape in which the organism lives. The first factor is organism specific, and will vary with respect to life history traits. The second is landscape specific, and correlates with habitat patch size and shape, distance between patches, and the intervening matrix. By affecting animal movement, this interaction affects gene flow, and thus influences allele frequency differences across habitat patches. We examined landscape connectivity in an endangered arboreal primate, the Black-Lion Tamarin, and in three terrestrial mammals, across a fragmented landscape to test the expectation that a purely arboreal life-style would exhibit a stronger isolation effect than a terrestrial life-style. In particular, we ask: (1) Is there evidence for connectivity across habitat patches based on neutral genetic variation at microsatellite loci in all four species? and (2) Is isolation, as measured by differences in allele frequency among habitat patches, stronger in an arboreal species than in terrestrial species? Bayesian inference of population structure suggests a number of independent genetic units in all four species across our study landscape, which is supported by AMOVA. Preliminary comparisons suggest a significant effect of life history traits in determining degree of landscape connectivity. We discuss how to best compare isolation across species, and conclude with suggestions for conservation action when faced with species variability in landscape connectivity.

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