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GENETIC CHARACTERIZATION OF A BROWN LEMUR HYBRID ZONE (*EULEMUR RUFIFRONS* X *E. CINEREICEPS*)

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Here, we characterize a hybrid zone between *Eulemur rufifrons* and *E. cinereiceps* at Andringitra in southeastern Madagascar. We collected samples from 16 sites and genotyped individuals (n = 212) on a fragment of the mitochondrial D-loop and 26 microsatellite loci. We used these data to identify the boundaries of our contact zone and to examine its composition, relative hybrid fitness and patterns of gene flow. The contact zone extended 23.8 and 53.8 km following mitochondrial haplotypes and microsatellite genotypes, respectively. The difference in width likely reflects the fact that both parental species are female philopatric, which can cause mitochondrial haplotypes to cluster. Within the region identified using microsatellites, 71% of individuals were hybrid. Loci sampled within these populations were also at Hardy-Weinberg and linkage equilibrium, suggesting that the contact zone is composed mostly of later generation hybrids that are equally as fit as parental forms. Population subdivision was strong at the boundaries of the zone and a Bayesian-clustering analysis grouped hybrids separate from parental forms. In addition, private nuclear alleles were identified in these populations, indicating that gene flow between hybrid and parental populations is limited. These patterns cannot be resolved under either the tension zone or neutral diffusion models of hybrid zone stability. Instead, the hybrid zone appears to conform to the ecotone model, being maintained by differential environmental selection favoring hybrids in transitional habitats and parental forms outside. Our results highlight the evolutionary potential of hybrid populations and the important role environmental selection can play in evolution.

Keywords: hybrid zone, *Eulemur*, mitochondrial DNA, microsatellite