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DOES TREE GOUGING IN A RAINFOREST-DWELLING LEMUR CONVEY RESOURCE OWNERSHIP AS LOUD CALLING IN A DRY FOREST-DWELLING LEMUR?

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Non-human primates may defend crucial resources using acoustic or chemical signals. Defending resources may depend on population density and habitat characteristics. Using the Milne Edwards' sportive lemurs (*Lepilemur edwardsi*) and weasel sportive lemurs (*Lepilemur mustelinus*) as models, we tested whether two cryptic nocturnal lemur species differing in population density and habitat show differences in their vocal and chemical communication for signalling ownership of resources. *L. edwardsi* inhabits a western dry deciduous forest in a high density population whereas *L. mustelinus* is found in an eastern rainy forest with a low density. We followed 10 *L. edwardsi* (6 males, 4 females) and 9 *L. mustelinus* (4 males, 5 females) for a total of 215 hours and recorded their behaviour using focal animal sampling. We found that both species differed in their vocal and chemical communication. *L. edwardsi* was highly vocal and displayed loud calling during mornings and evenings while feeding or in the vicinity of resting places. In contrast, *L. mustelinus* never vocalized during observations, but displayed tree-gouging behavior which was never observed in *L. edwardsi*. Tree-gouging occurred more often during early evening than during early morning sessions. Subjects gouged trees after leaving their sleeping hole and before moving around. We suggest that in weasel sportive lemurs tree-gouging is used as a scent-marking behavior in order to display ownership of sleeping sites. Altogether, our findings provide first empirical evidence on the evolution of different communication systems in two cryptic nocturnal primate species contrasting in habitat quality and population density.

Keywords: tree-gouging; scent-marking; resource defense; nocturnal lemur