

HABITAT SIZE AFFECTS THE PHYSICAL CONDITION OF BLACK HOWLERS (*ALOUATTA PIGRA*) IN THE STATE OF CAMPECHE, MEXICO

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Habitat loss affects several aspects of the biology and behavior of howler monkeys. In the case of black howlers (*Alouatta pigra*) to date no study has evaluated the consequences of habitat loss on the health of individuals. The aim of the present study was to examine the relationship between habitat size and the physical condition of black howlers in the state of Campeche. We predicted that habitat size should relate positively with body weight (a proxy to general body condition), upper arm circumference (a measure of protein reserves) and chest circumference (a measure of lung capacity), and negatively with abdomen circumference (a measure of fat reserves). We anesthetized, captured and measured 71 adult individuals (35 males and 36 females) belonging to 20 black howler groups in the state of Campeche (Mexico) in the years of 2005-2007. The size of the habitat in which the study groups lived ranged from 1 to 3000 ha. Habitat size correlated positively with body weight ($r=0.30$, $p<0.05$) and upper arm circumference ($r=0.39$, $p<0.01$). Both abdomen and chest circumference did not relate significantly to habitat size, although the latter measure nearly reached statistical significance ($r=0.22$, $p=0.07$). These results suggest that the physical condition of black howlers is affected by habitat size. Individuals living in smaller forests have lower body weight and protein reserves, which may have a major negative impact on their life expectancy and reproduction. This study was financed by CFE (RGCPTTP-UV-001/04) and the Universidad Veracruzana.

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