

Geographic distribution of animal aggressions in the Selva Maya region of Mexico

Inhalt

The Selva Maya region and its protected areas (PAs) in Mexico face threats from ecosystem fragmentation and human encroachment, creating opportunities for zoonotic spillovers. An increase in wildlife-transmitted rabies has been observed in livestock, domestic animals, and humans, due to bites from bats, skunks, and cats. This study aimed to define the geographic distribution of animal aggression events towards humans as an indicator of rabies transmission risk and to identify sociodemographic and environmental factors potentially associated with these events. Animal aggressions in the region were obtained based on the geographic location of the reporting health units. Sociodemographic variables at the Basic Geostatistical Area (AGEB) level were linked to the health units using an estimated catchment area defined by the shortest travel distance. The catchment area is also used to determine exposure to indicators of biodiversity changes. Preliminary analyses employing a hierarchical, zero-inflated Poisson regression model suggested that animal aggressions tended to concentrate in more populated areas but also occurred near PAs. Localities with farming as the primary economic activity had a higher probability of animal aggressions than those with agriculture, while ranches or farms were more prone to aggression events than villages. These findings allow further developments of the model to inform targeted risk communication strategies to prevent rabies transmission.

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