

# South American howler monkeys may be more threatened than previously thought

October 4 2017, by Biologists Have Discovered That Their Populations Are Highly Subdivided And Less Abundant Than Supposed.

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Among the largest primates in the Americas and with one of the loudest calls in the animal kingdom, howler monkeys are iconic species of South American tropical forests. They live in several types of forest ecosystems, from dry to riparian and rainforest. Although the forests they inhabit are being increasingly lost to deforestation for agriculture, howler monkeys are categorized as "Least Concern" by the IUCN Red List, meaning that they are considered to be not threatened with extinction. However, increasing deforestation rates and the howler monkey's susceptibility to yellow fever outbreaks call for a reassessment of their status.

Now, a paper appearing in the journal *PloS One* shows that populations of howler [monkeys](#) from Argentina and Paraguay are divided among four groups and that their effective population sizes – meaning the population that actually is reproducing – is very low, which makes them more susceptible to negative impacts, such as [yellow fever](#) outbreaks.

The study looked for genetic differentiation in black-and-gold howler monkeys (*Alouatta caraya*) from 10 localities in eastern Paraguay and northeastern Argentina, covering the full range of forest types in which howler monkeys live. The researchers found that howler monkeys from these 10 places can be divided into four management units and that landscape features, such as the presence of native forest or rivers, for instance, are important determinants of population connectivity among populations of howler monkeys. They also found that [genetic variability](#)

tended to be low in [howler monkeys](#) from these areas. Populations with a high genetic variability are able to cope with stressful events, such as a yellow fever outbreak, much better than population with low genetic variability. In fact, the black-and-gold howler monkey [population](#) with the lowest genetic variability analyzed by the biologists was later decimated, and went extinct, due to a yellow fever outbreak.

Forests of Argentina and Paraguay are under increasing risk of deforestation, mainly to increase the area for agriculture. Dr. Luciana Oklander, biologist at the Institute of Subtropical Biology and the leading author of the paper, reflects on the significance of the study: "Based on the results of our work, we believe that the Red List's conservation status of the black-and-gold howler monkey should be upgraded to from Least Concern to Vulnerable." She adds, "Effective conservation of Paraguay's and Argentina's forests is urgently needed because they are key to keep populations connected."

**More information:** Oklander L.I., C.I. Miño, G. Fernández, M. Caputo, D. Corach. 2017. Genetic structure in the southernmost populations of black-and- gold howler monkeys (*Alouatta caraya*) and its conservation implications. *PloS One* 12(10): e0185867.  
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