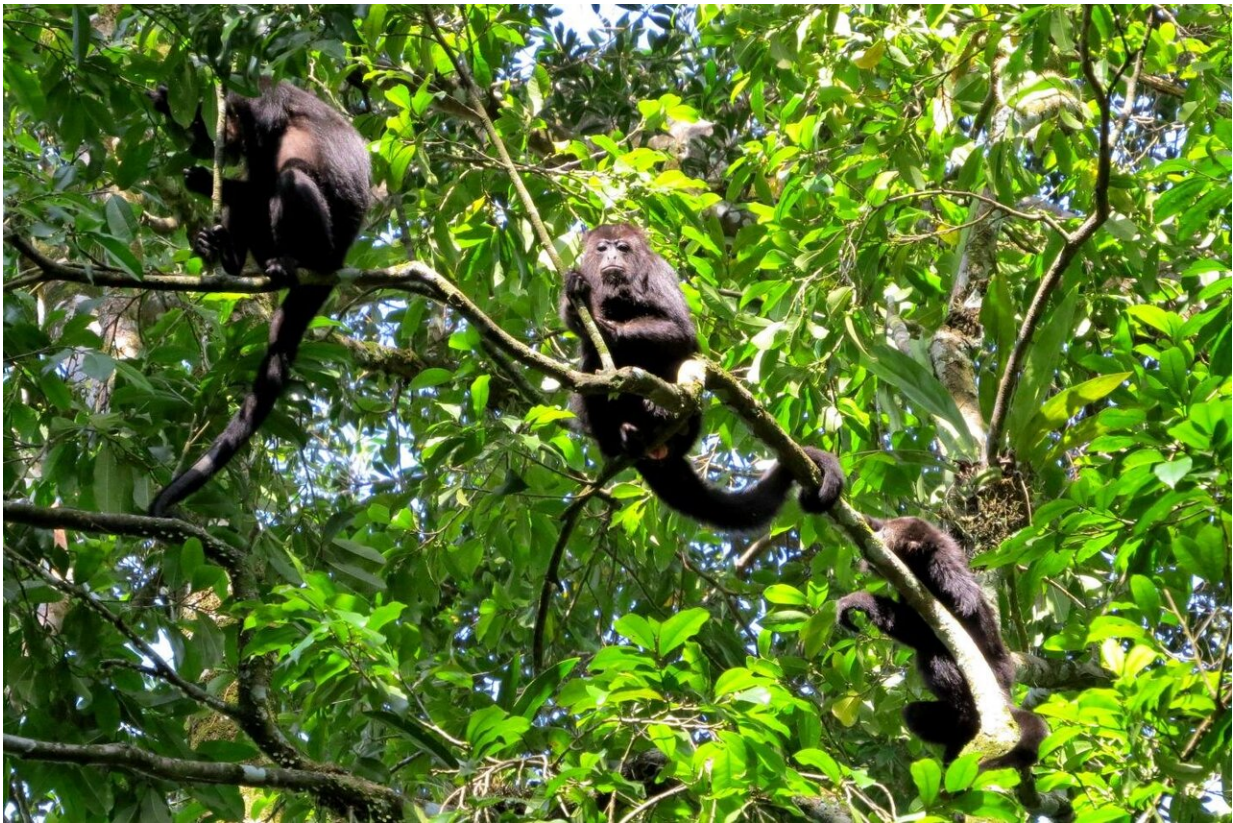


# Territorial, expert navigators: The black howler monkeys of Mexico

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Group of howler monkeys feeding. Credit: Dallas Levey

An international team of researchers led by Oxford Brookes University shows that black howler monkeys in Mexico not only remember where important events took place in their habitat, but also when to return to

such locations.

The researchers recorded the behavior of five groups of black [howler monkeys](#) accumulating over 3,000 hours of field observations at Palenque National Park, southern Mexico.

## **Expert fruit foragers**

Black howler [monkeys](#) were observed navigating deliberately towards out of sight [fruit trees](#) that were ripening. Fruit is a desired food by many animals in rainforests so being able to anticipate when fruit is going to be available and where, is a great strategy to forage ahead of competitors. The monkeys selected a small subset of fruit trees with easy-to-remember ripening cycles—showing, like humans, a tendency to minimize information processed during navigation.

Lead researcher Dr. Miguel de Guinea expert in Evolutionary Anthropology, Oxford Brookes University said, "In the same way that we remember the location of our favorite restaurants, primates remember the locations of their favorite fruit trees in rainforests. But there is a clear difference: fruit trees, instead of following established opening hours, can produce [fruit](#) at different times of the year during very specific windows. It is fascinating and impressive that a relatively small-brained primate can memorize the ripening patterns of many different [trees](#) and anticipate the emergence of fruits."

## **Vocal warning at set locations to ward off rival troops**

The research found that black howler monkeys traveled in long, straight lines, before reaching a [location](#) where they had previously encountered a neighboring troop. After reaching these locations, the monkeys used loud calls to warn neighboring primate groups of their territorial range.

The groups of monkeys started traveling in a completely different direction afterwards, indicating that they purposely navigate to these set locations.

Co-researcher Dr. Sarie Van Belle from the University of Texas at Austin, USA commented, "We already know that in howler monkeys, loud vocalization plays a central role in defending their home ranges. With this study, we have learned that they return to areas where neighboring groups had breached the home range border, to vocally announce that the area was occupied."

**More information:** Miguel de Guinea et al. Disentangling the importance of social and ecological information in goal-directed movements in a wild primate, *Animal Behaviour* (2021). [DOI: 10.1016/j.anbehav.2020.12.017](https://doi.org/10.1016/j.anbehav.2020.12.017)

Provided by Oxford Brookes University

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