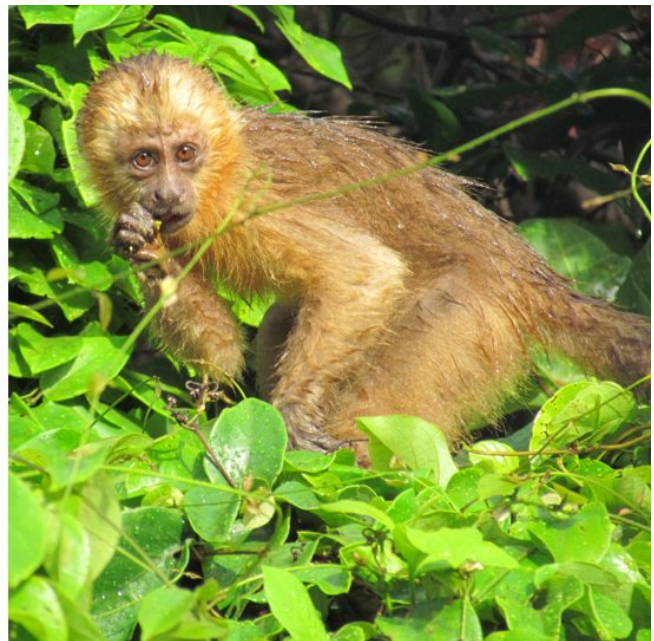
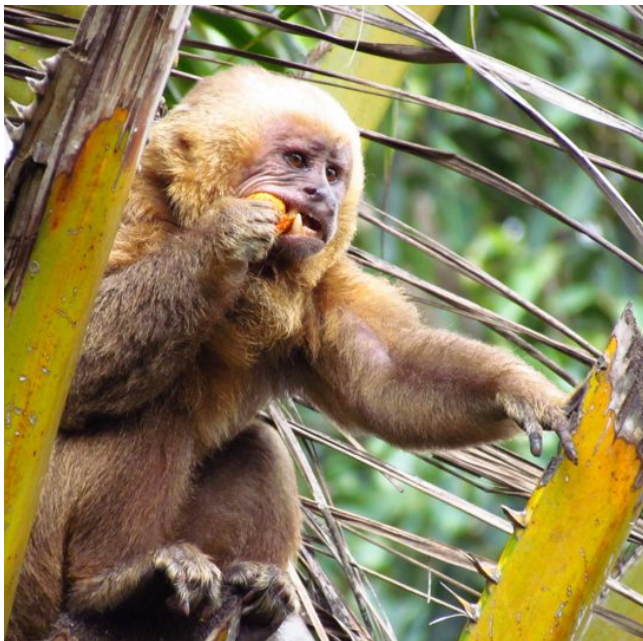


## Red alert for primates in north-east Brazil

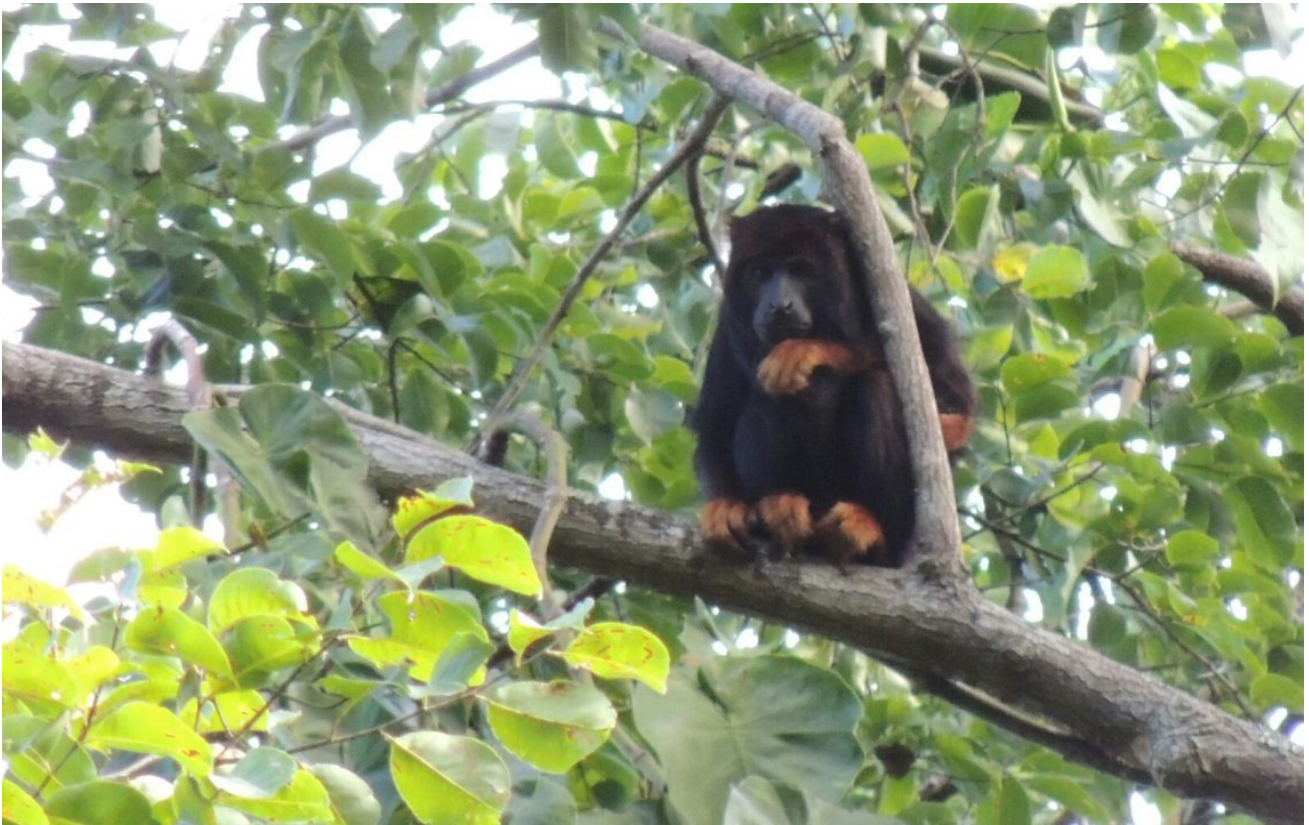
By Barbara Moraes, 29th September 2020

Of the 473 known species of primate, 118 have been recorded in Brazil. However, 40% of the country's primates are threatened with extinction as a result of habitat loss and fragmentation, and hunting. Only 6% of the north-east region's Atlantic Forest and 50% of the Cerrado and Caatinga forests remain. Thirteen of the 20 primates known to occur in the north-east are threatened with extinction, and climate change will further affect their chance of survival. Unless efforts are put in place to mitigate and reduce greenhouse gas emissions, increasing temperatures and decreasing precipitation will render the region arid and inhospitable.



Left: Adult male of the Blonde Capuchin monkey and prominent throat flap. Right: A sub-adults of Blonde Capuchin monkey. Photos: Monique Bastos

The threats to the primates of north-east Brazil lead us to examine the current distribution of three species and the influence of anthropogenic impacts and future climate change. We focused on the blonde capuchin *Sapajus flavius*, bearded capuchin *Sapajus libidinosus* and red-handed howler monkey *Alouata belzebul*. We selected these three species because they are endemic to Brazil, are targeted by several conservation policies, and their known distribution includes the main biomes of north-east Brazil. They are also umbrella species: protecting these primates will lead to the conservation of their habitats and the other animals that inhabit them.



Adult male of Red-handed howler monkey. Photo: Julianne Moura

The Vulnerable red-handed howler monkey eats leaves and fruits, spends most of its time resting and has a disjunct distribution, occurring in the north-east Atlantic Forest and in the lower eastern Amazon forest in the states of Amapá, Pará and Maranhão. The Endangered blonde capuchin is omnivorous, very vocal and it is restricted to the north-east, occurring mostly in the Atlantic Forest but with some populations in the Caatinga Forest. The Near Threatened bearded capuchin is renowned for its use of tools to obtain food, is heavily targeted by the illegal pet trade, and inhabits the dry forests of the Caatinga and Cerrado biomes—half of its natural habitat has already been lost.



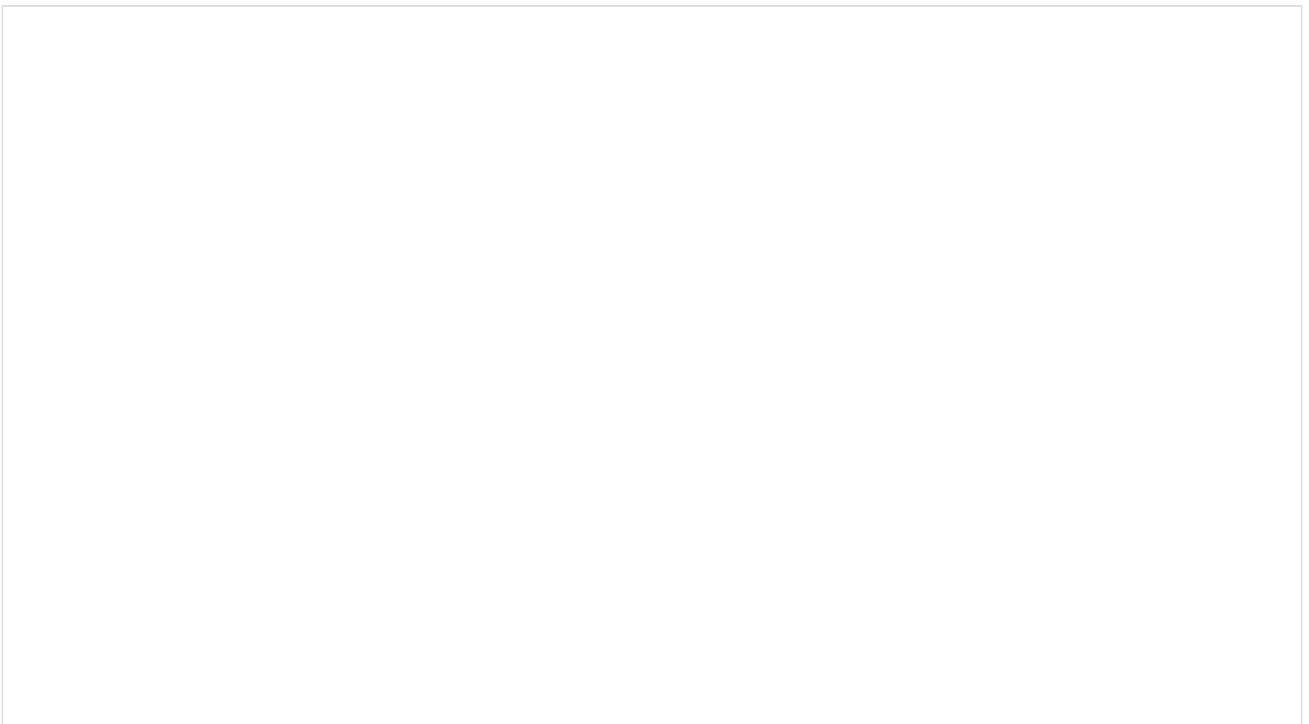
Left: A sub-adult (right) and an adult female (left) Bearded capuchin monkey. Right: Female and an infant Bearded capuchin monkey. Photos: Monique Bastos

Our [study](#) showed that 88% of the area climatically suitable for these three species are outside protected areas and 24% are in areas with forest cover. Only 27% of the climatically suitable areas are considered priority areas for conservation, but those are not included in officially protected areas. Our predictive models showed that future climate change will lead to substantial habitat losses for these three primate species. A severe climate change scenario could result in losses of up to 94, 98 and 54% of the habitat of the red-handed howler monkey, blonde capuchin and bearded capuchin, respectively. Any such changes would negatively affect the establishment of populations and their long-term survival. In addition, the current government continues to weaken environmental laws, leading to further deforestation and fragmentation and the destruction of primate habitats. We hope our findings will be a wakeup call for environmental conservation in Brazil.



Caatinga forest fragment: the vegetation is characterized as hyperxerophilous with patches of deciduous forest. Bearded capuchins occur in this area in Serra Talhada, Pernambuco, Brazil. Photo: Bárbara Moraes

The article [Habitat suitability for primate conservation in north-east Brazil](#) is available in *Oryx—The International Journal of Conservation*.





## Barbara Moraes

Bárbara Moraes recently completed her doctorate in Animal Biology at the Federal University of Pernambuco, where she studied the effect of climate change and natural landscapes on the distribution and genetic diversity of primates. Previously, she conducted research on the diet of and tool use by bearded capuchins as part of her Masters programme. She has also worked in a protected area and in a zoo in north-east Brazil, focusing on in situ and ex situ conservation, animal welfare and environmental education. Her current interests include landscape genetics, mammal ecology and habitat conservation.