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Life

Stone tools help monkeys thrive in hostile habitats

Golden-bellied capuchins are usually found in humid forests, but some populations appear to have adapted to life in drier habitats with the help of stone tools

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Capuchins can use stone tools to access food
Roland Seitre/NaturePL

CRITICALLY endangered golden-bellied capuchins are more widespread than we had thought, and stone tools might explain why.

Although golden-bellied capuchins (*Sapajus xanthosternos*) are usually found in the humid Atlantic Forest of eastern Brazil, Waldney Martins at the State University of Montes Claros in Brazil found a population living outside the forest several years ago. "This stayed in my mind," he says.

He and his colleagues have now found golden-bellied capuchins at several sites in the dry forest south of their usual habitat. This has increased the monkeys' known geographical range by almost 20,000 square kilometres. "For an endangered species, any expansion of its limits, no matter how small, is very important for its conservation," says Martins.

The survey work also revealed something else: evidence that *S. xanthosternos* populations in the dry forest use stone tools to split open tough palm tree fruits. That is a significant discovery because the species doesn't seem to use stone tools in the Atlantic Forest, even when it has access to suitable stones (*International Journal of Primatology, doi.org/n8v3*).

This makes Martins and his colleagues suspect that stone tools allowed the monkeys to move into new territory. Easily accessible food is harder to find in the dry forest, so the capuchins may only be able to survive there because tools allow them to eat the flesh of palm tree fruits. The conclusion invites comparisons between the capuchins and our human ancestors, who may also have relied on tools and technology to expand into new environments.

Michael Gumert at Nanyang Technological University in Singapore says Martins and his colleagues still have work to do to strengthen their idea. "Did *S. xanthosternos* colonise the drier habitats and start using tools? Were they already there [using tools], and then the habitat dried?"

But Michael Haslam, an independent researcher in the UK, thinks the circumstantial evidence is enough to support the idea. He says earlier genetics research led by Jessica Lynch at the University of California, Los Angeles – who was also involved in the new analysis – suggests capuchins have been living in the Atlantic Forest for several million years but only moved into the drier forests within the past 750,000 years.

"It is a reasonable hypothesis that the expansion was made possible by stone tools to exploit the tougher foods found in those drier places," he says.

Whether this behavioural flexibility will help the species cope with ongoing habitat loss is unknown. "The kind of work in the new study is vital for understanding how the two primates – us and [golden-bellied] capuchins – can or will adapt to each other," says Haslam.