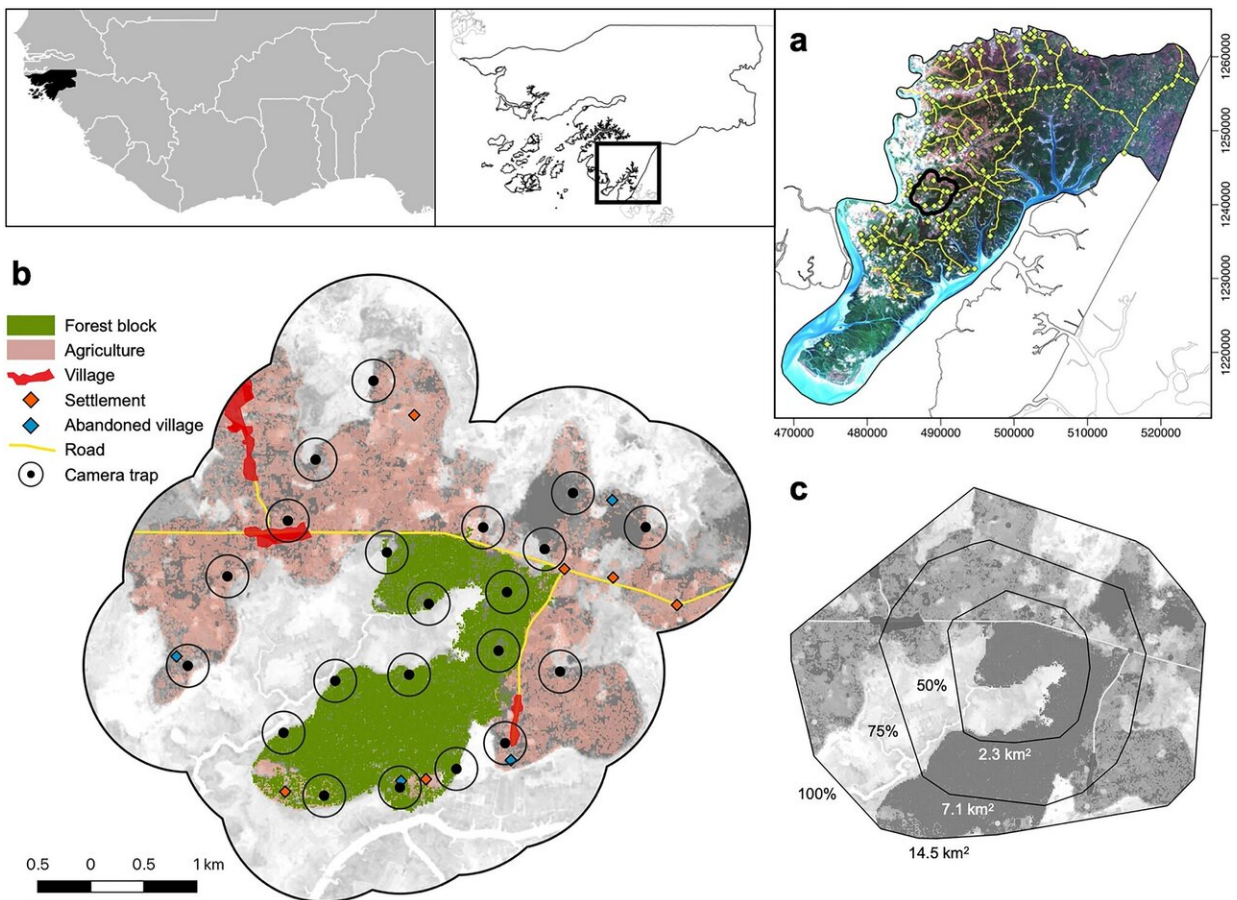


Chimpanzees and humans share overlapping territories

February 25 2021



Map and location of the study area in Caiquene–Cadique, Cantanhez National Park, Guinea-Bissau, West Africa. (a) Cantanhez National Park includes a road network and approximately 200 villages and settlements. (b) Map of Caiquene–Cadique study area showing the 21 camera trap sampling sites and respective 200 m buffers where availability of chimpanzee foods was quantified. The forest block is shown in green and the heterogeneous matrix outside the

forest block includes cashew orchards and shifting cultivation fields shown in pink, roads, three villages, five settlements and four abandoned villages. (c) Estimated home range of Caiquene–Cadique chimpanzees using 100% minimum convex polygon (MCP) analysis of 1380 direct and indirect observations of chimpanzees collected between 2013 and 2018. MCP analyses were ran using the R package ADEHABITATHR version 0.4.1967. The base layers in a-c panels consist of modified Copernicus Sentinel-2 data from 25 January 2017 (RGB colour and grey scale). Credit: *Scientific Reports* (2021). DOI: 10.1038/s41598-021-83852-3

Chimpanzees and humans "overlap" in their use of forests and even villages, new research shows.

Scientists used camera traps to track the movements of western [chimpanzees](#)—a critically endangered species—in Guinea-Bissau.

Chimpanzees used areas away from villages and agriculture more intensively, but entered land used by humans to get fruit—especially when wild fruits were scarce.

Researchers from the University of Exeter and Oxford Brookes University say the approach used in this study could help to inform a "coexistence strategy" for chimpanzees and humans.

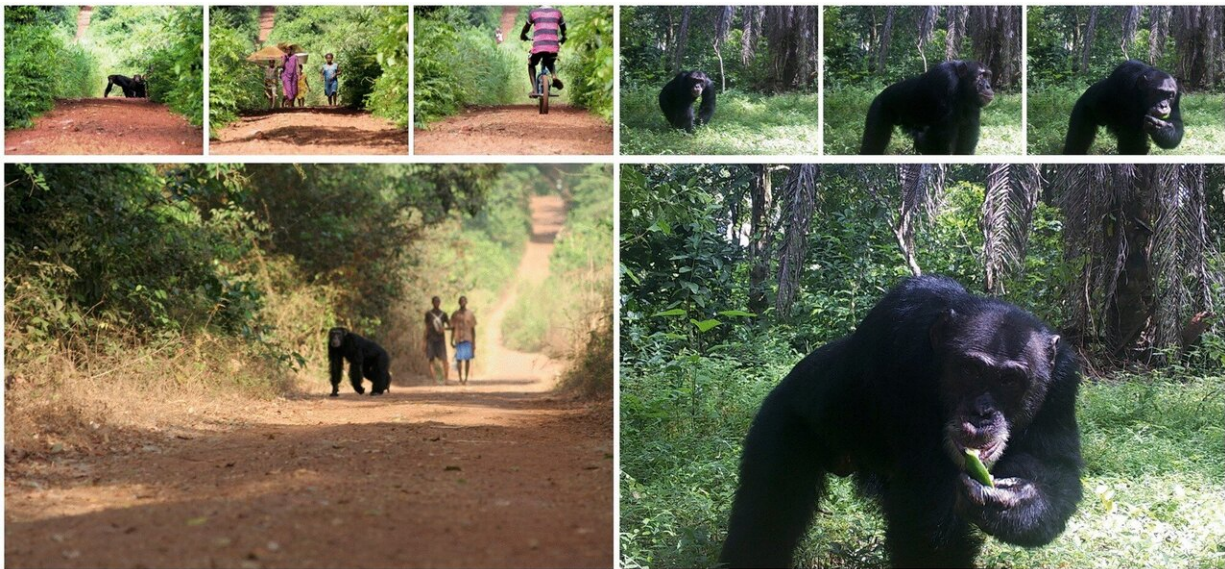
"Understanding how wildlife balance the risks and rewards of entering environments used by humans is crucial to developing strategies to reduce risks of negative interactions, including [disease transmission](#) and aggression by animals or humans," said lead author Dr. Elena Bersacola, of the Centre for Ecology and Conservation on Exeter's Penryn Campus in Cornwall.

"Using 12 months of data from 21 camera traps, our study produced

hotspot maps that show how humans and chimpanzees overlap in their use of forests, villages and cultivated areas."

Chimpanzee use of space was linked to the availability of naturalized oil-palm fruit, and the study also shows that chimpanzees access high-risk orange, lime and papaya fruits in response to nutritional necessity rather than preference alone.

The study used a "landscape of fear" framework, based on the idea that animals learn about risks and the resulting fear shapes their decisions over where and when to feed, travel and rest.



Chimpanzees in Caiquene–Cadique often use the roads located at the centre of their home range and frequently feed on cultivated foods. The camera trap images (right) show a chimpanzee entering Caiquene village to feed on orange in October 2017. Credit: *Scientific Reports* (2021). DOI: 10.1038/s41598-021-83852-3

Researchers are increasingly incorporating humans as agents for shaping the wildlife's landscapes of fear.

The team in this study were cautious not to let the chimpanzees become "habituated" (used to humans, and therefore not fearful).

"Elena got around this problem by setting up a patchwork of [camera traps](#) throughout one chimpanzee community's home range and monitoring their use of space," said Dr. Kimberley Hockings, of the University of Exeter.

"The methods and analyses Elena used are new and exciting and have helped us understand human-chimpanzee coexistence across the landscape.

"This is important because western chimpanzees are critically endangered and these shared landscapes are crucial for their persistence.

"These methods can also be applied to other threatened wildlife that are being pushed into ever-increasing human-impacted landscapes across the globe."

Professor Catherine Hill, of Oxford Brookes University, said: "Our modeling approach generates fine-resolution space-time output maps, which can be scaled-up to identify human-wildlife interaction hotspots.

"Our method provides the necessary tools to understand and more effectively manage [human](#)-wildlife coexistence at different spatial scales, including the management of resources important to both."

The paper, published in the journal *Scientific Reports*, is titled "Chimpanzees balance resources and risk in an anthropogenic landscape of fear."

More information: Elena Bersacola et al. Chimpanzees balance resources and risk in an anthropogenic landscape of fear, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-83852-3](https://doi.org/10.1038/s41598-021-83852-3)

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