

An elephant never forgets the way to the watering hole

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African Bush Elephant in Mikumi National Park, Tanzania. Taken by Oliver Wright, via Wikipedia.

A study published in *Proceedings of the Royal Society B* tracked the movement of elephants across the African savannah. The elephants chose the shortest distances towards watering holes, pin-pointing the location of valuable resources even when they were 50 km away. The results show that elephants have good spatial memories.

Spatial memory is vital for [animals](#) to efficiently find scarce or patchy resources without wasting energy. Research has already demonstrated how foraging animals use spatial memory to find resources but at the moment little is known about how animals use spatial memory when they are travelling over vast distances.

Elephants in the savannah manage to locate watering holes which are scattered widely across a featureless landscape. In this study researchers tracked elephants in the Etosha National Park in Namibia to find out whether the elephants movement towards watering holes and forage was consistent with what they'd expect if the elephants were using spatial cognitive capacity - the same cognitive processes used by foraging animals over shorter distances.

By tracking individual elephants over two years the team found that the elephants were remarkably good at finding water resources, heading rapidly and directly towards their goal. They made decisions on which watering hole to visit when they were several kilometres away from them and, 90% of the time, picked the nearest watering hole to their location, minimising their travelling distance.

The team analysed the movements of the elephants, particularly how far away from the holes they were when they changed their direction or speed and made the decision to go to the watering hole. Looking at this distance and direction of approach the team ruled out the likelihood that elephants got clues about where the watering holes were by sight, the smell of water or noise from other animals at the watering hole. Elephants chose their paths to the watering holes and altered their directions between 4.59 and 49.97 km from the watering holes - distances that are too far from the watering holes to use those senses to find them.

The team concluded that their analysis supports the idea that [elephants](#) use [spatial memory](#) to track down water resources across the large distances of the savannah.

More information: "Elucidating the significance of spatial memory on movement decisions by African savannah elephants using state–space models" [DOI: 10.1098/rspb.2014.3042](https://doi.org/10.1098/rspb.2014.3042)

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