

SAVE THE ELEPHANTS PRESS RELEASE
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ELEPHANTS HAVE WORD FOR 'BEE-WARE'

For the first time elephants have been found to produce an alarm call associated with the threat of bees, and have been shown to retreat when a recording of the call is played even when there are no bees around.

A team of scientists from Oxford University, Save the Elephants, and Disney's Animal Kingdom, made the discovery as part of an ongoing study of elephants in Kenya. They report their results in the journal PLoS One.



Elephants running from the sound of bees

'In our experiments we played the sound of angry bees to elephant families and studied their reaction,' said Lucy King of Oxford University's Department of Zoology and charity Save the Elephants, who led the research. 'Importantly we discovered that elephants not only flee from the buzzing sound but make a unique 'rumbling' call, as well as shaking their heads.'

The team then looked to isolate the specific acoustic qualities associated with this rumbling call and played the sounds back to the elephants to confirm that the recorded call triggered the elephants' decision to flee even when there was no buzzing and no sign of any bees.

'We tested this hypothesis using both an original recording of the call, a recording identical to this but frequency-shifted so it resembled a typical response to white noise and another elephant rumble as a control,' said King. 'The results were dramatic: six out of ten elephant families fled from the loud speaker when we played the 'bee rumble' compared to just two fleeing when we played a control rumble and one with the frequency-shifted call. Moreover, we also found that the elephants moved away much further when they heard the 'bee' alarm call than the other rumbles.'



Elephants running from the sound of bees

The researchers believe such calls may be an emotional response to a threat, a way to coordinate group movements and warn nearby elephants – or even a way of teaching inexperienced and vulnerable young elephants to beware. Further work is needed to confirm whether the rumble call is used for other kinds of threats, not just bees.

‘The calls also give tantalising clues that elephants may produce different sounds in the same way that humans produce different vowels, by altering the position of their tongues and lips,’ said Dr Soltis who works with Disney’s zoo elephants to understand how elephants communicate. ‘It’s even possible that, rather like with human language, this enables them to give superficially similar-sounding calls different meanings.’

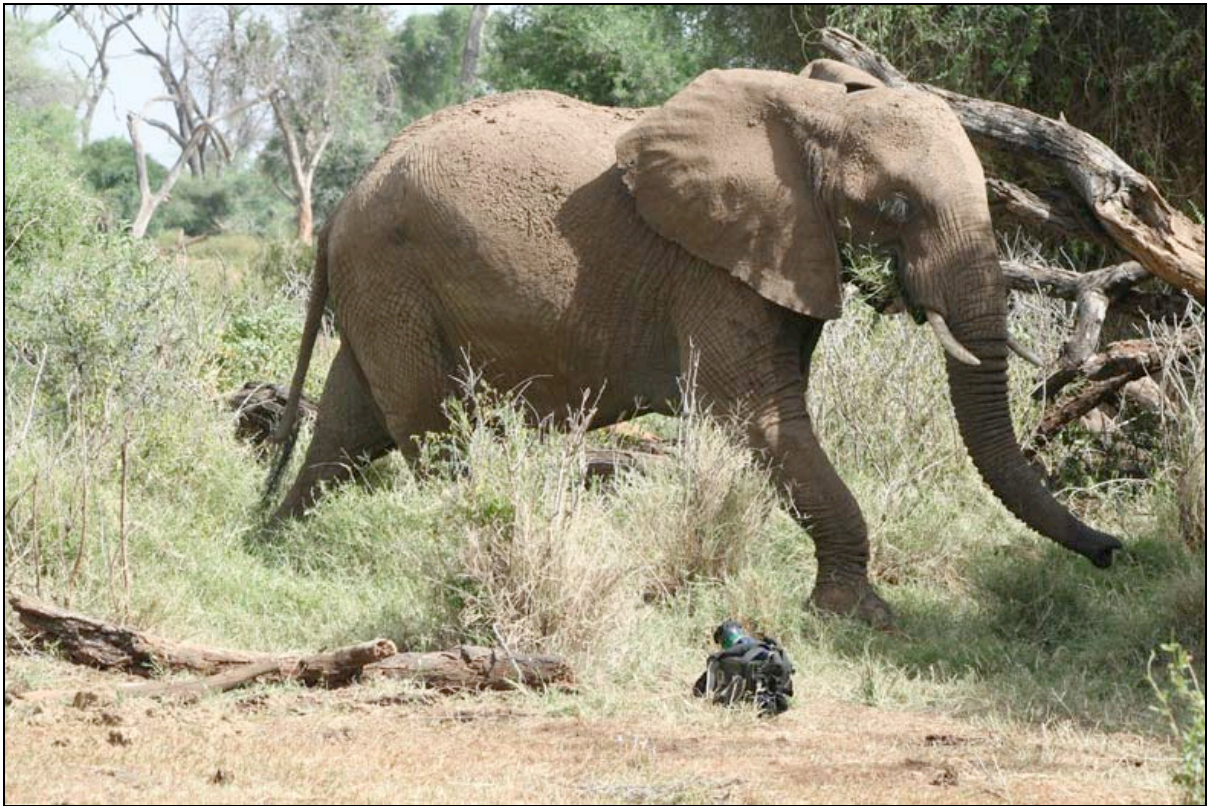
Earlier Oxford University research found that elephants avoid bee hives in the wild and will also flee from the recoded sound of angry bees. In 2009 a pilot study led King showed that a fence made out of beehives wired together significantly reduced crop raids by elephants. The team hopes that the new findings could help develop new ways to defuse potential conflicts between humans and elephants.



Beehive fence



Despite their thick hides adult elephants can be stung around their eyes or up their trunks, whilst calves could potentially be killed by a swarm of stinging bees as they have yet to develop this thick protective skin.



Elephant with microphone

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Images, audio and video of the research can be viewed at <http://www.youtube.com/watch?v=URchy4aR7g>

Alternatively contact the University of Oxford Press Office on 01865 283877 or by email at press.office@admin.ox.ac.uk

Notes to Editors

A report of the research, entitled 'Bee threat elicits alarm call in African elephants', is published in PloS One, embargoed until 22:00 BST/17:00 EDT (US) Monday 26 April 2010.

The research was conducted by Lucy King, Dr Iain Douglas-Hamilton and Professor Fritz Vollrath of Oxford University's Department of Zoology and Save the Elephants, and Dr Joseph Soltis and Dr Anne Savage of Disney's Animal Kingdom, Florida.

Earlier work by Dr Douglas-Hamilton and Professor Fritz Vollrath had suggested that elephants prefer to steer clear of beehives. In a 2007 study Lucy King tested the response of known elephants to the buzz of disturbed local African bees recorded digitally. More at: http://www.ox.ac.uk/media/news_releases_for_journalists/bee_buzz_elephants.html In 2009 work led by King a prototype beehive fence was developed that was shown to deter elephants from raiding crops. More at: http://www.ox.ac.uk/media/news_releases_for_journalists/090604a.html