

Small bats squeak at higher pitch to focus better, study reports

November 21 2012



Fruit bats hang from a tree in Gayndah, South Eastern Queensland in 2011. Small bats have to emit higher-pitched squeaks than their bigger cousins for their sonar navigation systems to work equally well, scientists said Wednesday.

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Bats use sonar signals to navigate in dark spaces, known as [echolocation](#), but scientists have been at a loss to explain why the smaller species' pitch was higher than considered necessary to locate their prey.

In measuring the signals emitted by six distinct [bat species](#), a team from the University of Southern Denmark found the answer: the size of the creatures' mouths.

Because of their relatively smaller "emitters" or mouths, smaller bats must emit their squeaks at sufficiently [high frequencies](#) to produce focused, highly-directional sound beams, explained a statement on the report published in *Nature*.

If they were to squeak at the same pitch as their bigger cousins with bigger mouths, the winged mammals' signals would travel a shorter distance and be scattered, said the study.

"Thus all bats adapted their calls to achieve similar acoustic fields of view," the authors wrote.

More information: DOI: 10.1038/nature11664

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Citation: Small bats squeak at higher pitch to focus better, study reports (2012, November 21) retrieved 27 April 2024 from <https://phys.org/news/2012-11-small-higher-pitch-focus.html>

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