

# Tiny primate 'talks' in ultrasound

February 8 2012, by Marlowe Hood

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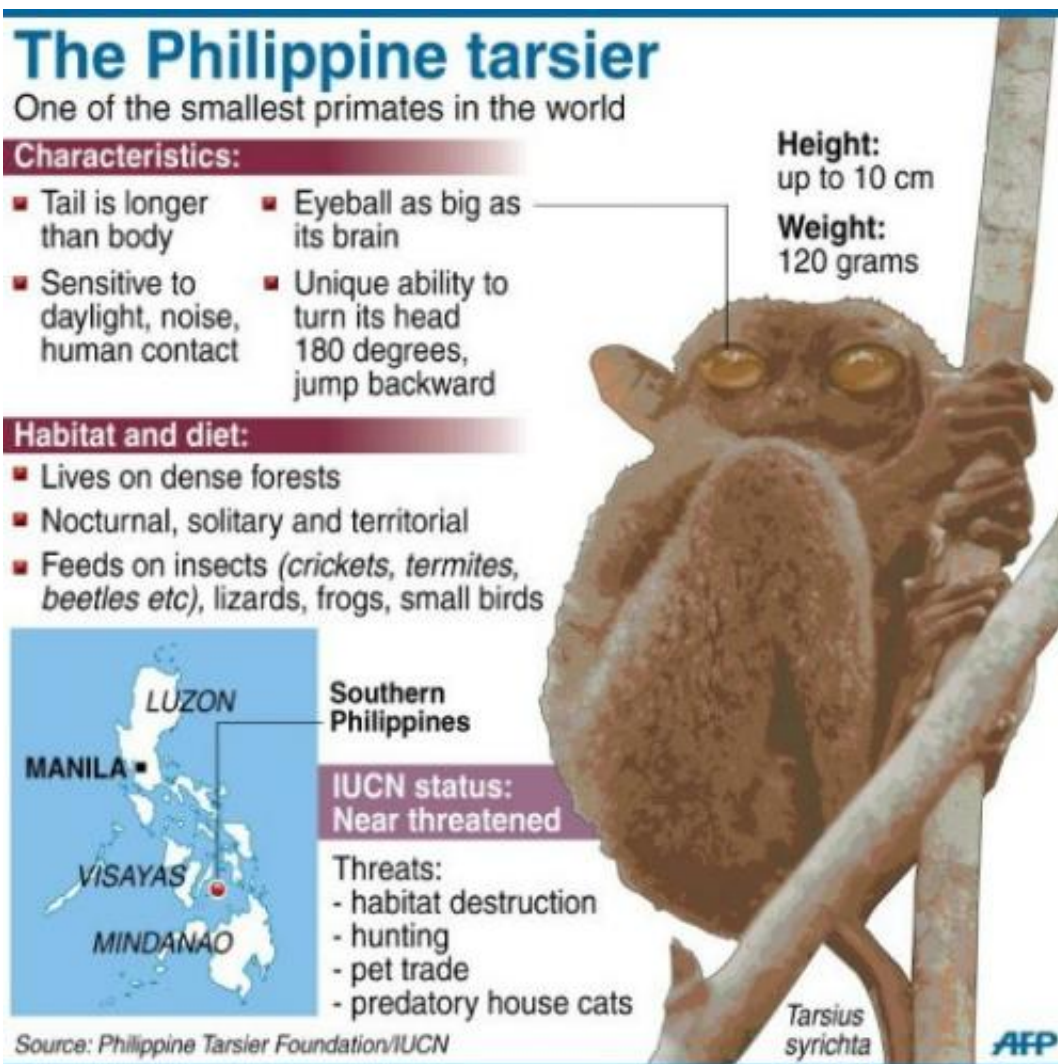
Two tarsiers cling onto trees in a wildlife sanctuary in the central Philippine island of Bohol in 2006. One of the world's smallest primates, the Philippine tarsier, communicates in a range of ultrasound inaudible to predator and prey alike, according to a study published Wednesday.

One of the world's smallest primates, the Philippine tarsier, communicates in a range of ultrasound inaudible to predator and prey alike, according to a study published on Wednesday.

No bigger than a man's hand, *Tarsius syrichta* can hear and emit sounds at a frequency that effectively gives it a private channel for issuing warnings or ferreting out crickets for a nighttime snack, the study found.

Only a handful of mammals are known to be able to send and receive vocal signals in the [ultrasound](#) range, above 20 [kilohertz](#) (kHz), including some whales, [domestic cats](#) and a few of the many species of bats.

And few of these can squeal, screech or squawk at the same sonic altitudes as the saucer-eyed tarsier, which up to now had been mistakenly described as being "ordinarily silent," researchers found.



## The Philippine tarsier

One of the smallest primates in the world

**Characteristics:**

- Tail is longer than body
- Sensitive to daylight, noise, human contact
- Eyeball as big as its brain
- Unique ability to turn its head 180 degrees, jump backward

**Habitat and diet:**

- Lives on dense forests
- Nocturnal, solitary and territorial
- Feeds on insects (*crickets, termites, beetles etc*), lizards, frogs, small birds

**IUCN status:** Near threatened

**Threats:**

- habitat destruction
- hunting
- pet trade
- predatory house cats

Height: up to 10 cm  
Weight: 120 grams

Source: Philippine Tarsier Foundation/IUCN

*Tarsius syrichta*

AFP

Fact file on the Philippine tarsier, one of the world's smallest primates, now discovered to be able to communicate in ultrasound frequencies, according to a study published on Wednesday

Its finely-tuned ears are capable of picking up frequencies above 90 kHz, and it can vocalise in a range around 70 kHz.

By comparison, humans generally can't hear anything above 20 kHz, and a dog whistle is pitched to between 22 and 23 kHz.

A team of scientists from the United States and the Philippines led by Marissa Ramsier of Humboldt State University in California gathered their inaudible results in two ways.

First they captured six of the docile nocturnal creatures and placed them inside custom-build sound chambers to test their sensitivity to high-pitched sounds.

After the experiments, the rare and [endangered animals](#) were returned unharmed to their [natural habitat](#), on the Philippine island of Mindanao.



A tarsier eyes a cricket in a wildlife sanctuary in the central Philippine island of Bohol in 2006. One of the world's smallest primates, the Philippine tarsier, communicates in a range of ultrasound inaudible to predator and prey alike, according to a study published Wednesday.

To measure the frequency of the tarsier's ultrasound chatter, the researchers recorded another 35 specimens in the wild.

"The minimum frequency of the call -- 67 kHz -- is the highest value of any terrestrial mammal, excluding bats and some rodents," said the study, published in the British Royal Society's *Biology Letters*.

What advantages do the tarsier's high-end vocal acrobatics confer? There are several, the researchers suggest.

One is being able to sound a silent alarm.

"Ultrasonic calls can be advantageous to both the signaller and receiver as they are potentially difficult for predators to detect and localise," the researchers explain.



A newborn tarsier is cuddled by its mother after giving birth in captivity in the Philippine town of Sarangani in 2002. One of the world's smallest primates, the Philippine tarsier, communicates in a range of ultrasound inaudible to predator and prey alike, according to a study published Wednesday.

The tarsier's exceptional hearing may also facilitate acoustic eavesdropping on noises emitted by prey, which range from [crickets](#) and cockroaches -- their staple diet -- to the occasional moth, katydid or hatchling bird.

Finally, the study speculates, being able to communicate in ultrasonic ranges filters out all the low-frequency "noise" and hubbub of a tropical environment.

Tarsier's have five-digit hands that eerily resemble -- in emaciated form -- their human counterparts.

Lacking the typical "night vision" of other nocturnal creatures, they also have -- in relation to their body size -- the largest eyes of any primate on Earth.

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Citation: Tiny primate 'talks' in ultrasound (2012, February 8) retrieved 19 April 2024 from <https://phys.org/news/2012-02-tiny-primate-ultrasound.html>

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