

**'I'm a horny herbivore . . . hear me roar!'**



LYNDON MECHIELSEN

Ecologist Bill Ellis has discovered that male koalas have unique voice boxes that allow them to impress the girls by roaring like a lion at mating time

LEIGH DAYTON  
SCIENCE WRITER

WHEN it comes to bellowing, an 8kg male koala can outdo a 1000kg bison, according to new findings about the eucalypt-nibbling marsupial's unlikely vocal powers.

The seemingly esoteric discovery comes from a study of the anatomy and acoustics of the male koala's vocal tract, which gets its toughest workout during

mating season — when they are showing off for picky females and intimidating competitors.

"It's an extreme case of honest advertising. They're blowing their own horn in a big way," says University of Queensland koala ecologist Bill Ellis, co-author of the report published today in *The Journal of Experimental Biology*.

The biggest koalas have the deepest bellows, according to Dr Ellis, University of Vienna animal vocalisation expert Ben Charlton and their colleagues at

UQ and Brisbane's Moggill Koala Hospital and Lone Pine Koala Sanctuary.

Previously, Dr Ellis had confirmed with GPS tracking, listening stations and DNA fingerprints that larger males generally had better breeding success.

He was also curious about the bellowing. "Koalas are cryptic, arboreal and rather solitary," he says. "The bellow is about the most intriguing aspect of their behaviour."

Hence the decision to combine

forces. By conducting magnetic resonance imaging and post-mortem studies, the team discovered the animal's larynx, or voice box, is not positioned high in its throat, as in most animals.

Instead, it is "descended" to the level of the third or fourth cervical vertebrae. Furthermore, the muscle attaching the larynx to the sternum is anchored deep in the chest, suggesting koalas can pull it even further into their chest cavity for a more resonant roar.

"Individuals that could elong-

ate their vocal tracts by lowering the larynx may have gained advantages during sexual competition by sounding larger, and this would drive the evolution of the laryngeal descent," says Dr Charlton, who analysed the resonance of recorded bellows.

When he calculated the length of the vocal tract based on their acoustics, he found they could make themselves sound like an animal with a 50cm vocal tract.

That's nearly as long as the koala, Dr Ellis says. "It's amazing."