

Jump to it! A frog's leaping style depends on the environment (w/ Video)

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A frog's jump is not as simple as it seems... Australian scientists have discovered that different species adopt different jumping styles depending on their environment.

Lead researcher, Miss Marta Vidal-Garcia (PhD candidate, Australian National University), found that tree dwelling [frogs](#) reached great heights but didn't cover much distance with their jumps. Aquatic frogs, meanwhile, jumped very long distances but remained close to the ground. On the other hand, the jumps of burrowing frogs were low both in height and distance. The scientists used high speed video cameras to film the jumps of approximately 230 wild frogs, from 30 different species. 'We searched actively for the frogs at night after heavy rains during their breeding season, as they are more likely to be active', Miss Vidal-Garcia said. The frogs were caught by hand and filmed in the field with two high-speed filming cameras in order to get a Three-Dimensional view of their jumps. The videos were then analysed frame by frame by computer software and variables including height, distance and speed were measured. The results showed that frogs from different habitats adopt distinct jumping styles.

Frogs from different habitats also had distinct shapes. 'Burrowing frogs have very squat bodies and short limbs' explained Miss Vidal-Garcia. 'This is because they tend to occupy arid environments so this helps to minimise water loss through their permeable skin. The aquatic frogs, however, have more streamlined bodies with longer limbs to improve swimming ability'.

Miss Vidal-Garcia added 'In the future, I am hoping to do more fieldwork so that I can collect data from fifty species and cover all the Australian frog clades. I also want to investigate how the shape of the pelvis influences jumping style'.

More information: This work was presented at the Annual Meeting of the Society for Experimental Biology in Manchester, UK, on Wednesday 2nd July, 2014.

Provided by Society for Experimental Biology

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