

Australian birds feel heat of climate change

17 February 2015, by David Ellis

Ever wondered how pigeons are able to function quite happily on extremely hot days while other birds are nowhere to be seen?

University of Adelaide researchers are contributing to a large international study aiming to advance the understanding of how different groups of [birds](#) tolerate and respond to heat stress.

PhD student and veterinarian Shangzhe Xie and a team from the University's School of Animal and Veterinary Sciences are researching the physiological and behavioural mechanisms underlying heat tolerance in wild and captive Australian birds.

"Australian birds are increasingly under threat from extreme weather conditions, and as temperatures continue to rise with [climate change](#), sensitive groups of birds will begin to feel the heat," says Dr Xie.

"At the moment we are unable to measure the sensitivities of individual bird species to extreme climate events such as heat waves. It's important we learn more about this as increasingly large numbers of birds die during heatwaves in Australia and overseas," he says.

In a study concluded last summer, Dr Xie and his team measured several physiological parameters, including the evaporative water loss and metabolic rates of Australian desert birds in different temperatures. They found different groups of Australian desert bird species can tolerate heat to different extents.

The team then turned their attention to captive birds at the Adelaide Zoo, observing different [bird species](#)' behaviour, such as displaying a lack of activity or seeking shade, during extremely hot [weather conditions](#).

"The next stage of our research will look at the behaviour of wild desert birds, to see if they demonstrate differences in behaviour compared

with captive birds in the Adelaide Zoo," says Dr Xie.

"Interestingly, from the data we have collected so far, the physiological limits and the behavioural adaptations of different groups of birds appear to be related. For example, pigeons are able to tolerate the highest temperatures and were also found to not reduce their activity in hot weather. We hope to be able to explain this link between physiological and behavioural adaptations," he says.

This research will contribute to understanding how climate change might impact the structure and function of different families of birds in the long term. The information gathered will also help zoos and wildlife parks refine aviary design to allow captive birds to better cope with the [heat](#).

"We hope the overall outcomes of this research will also inform natural resource managers by providing risk assessments for species and regions," says Dr Xie.

Provided by University of Adelaide

APA citation: Australian birds feel heat of climate change (2015, February 17) retrieved 17 September 2019 from <https://phys.org/news/2015-02-australian-birds-climate.html>

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