

Australian plant 'kangaroo paw' may hold clues to understanding biodiversity down under

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The Kangaroo Paw: *Anigozanthos manglesii* "paw" part from where the name is derived. Credit: Gngarra, CC BY 2.5 au

A new study on kangaroo paws by The University of Western Australia

and researchers at Kings Park and Botanic Gardens has challenged existing views that plants favour long distance rather than short distance pollination to reproduce.

In the study funded by the Australian Research Council and published in *Annals of Botany* the researchers analysed pollination dispersal distances in the Kangaroo Paw, a bird-pollinated plant, at Kings Park.

Lead researcher UWA Ph.D. student Bronwyn Ayre, from UWA's School of Biological Sciences, said scientists used hand pollination to transfer pollen between different kangaroo paw [plants](#) at varying distances and then tested which donor plant fathered the most seeds.

"Surprisingly, it was near neighbour pollen that had the greater advantage over more distant pollen which is unexpected—we often assume that bird-pollination results in pollen dispersal across much larger distances," she said.

"It appears this may be true for many other bird-pollinated plants—it's around twice as common for plants pollinated by birds to choose local pollen, compared to plants pollinated by insects."

The findings have important implications for understanding plant biodiversity and evolution, and in particular WA's South West which is recognised as having the world's greatest concentration of plants pollinated by birds and mammals.

"It's been great working with kangaroo paws—they're unique, fascinating, and a great example of the incredible biodiversity here in WA," Ms Ayre said.

"It will be interesting to consider these results when looking at areas in the South West that have infertile and climatically buffered landscapes

but still have a great deal of biodiversity," she said.

"Maybe favouring [pollen](#) from local sources has helped these plants adapt and survive in otherwise difficult environmental conditions."

UWA Professor Stephen Hopper, also involved in the research, said south-west Australian flora presented an ongoing goldmine of opportunity for new biological discoveries.

"Only now are we beginning to reveal the globally exceptional diversity and interest of this irreplaceable biological heritage," he said.

More information: Bronwyn M Ayre et al. Near-neighbour optimal outcrossing in the bird-pollinated *Anigozanthos manglesii*, *Annals of Botany* (2019). [DOI: 10.1093/aob/mcz091](https://doi.org/10.1093/aob/mcz091)

Provided by University of Western Australia

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