

# Humans, not climate, driving increased dengue risk in Australia

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'Drought-proofing' Australia's urban regions by installing large domestic water tanks may enable the dengue mosquito *Aedes aegypti* to regain its foothold across the country and expand its range of possible infections, according to a new study published May 5 in the open-access journal *PLoS Neglected Tropical Diseases*.

Dr Nigel Beebe and colleagues from the University of Queensland, CSIRO Entomology, the Australian Army Malaria Institute, and the Communicable Diseases Branch of Queensland Health, Brisbane, challenge the common assumption that climate change will drive the spread of this mosquito, suggesting instead that the real driver is human behavior.

The study combines current and forecasted climate change conditions with historical epidemics to reveal the risk of dengue infections in all capital cities around Australia by 2050. Beebe and colleagues developed and critically assessed their models to project the distribution of the mosquito in 2030 and 2050. Currently, [dengue fever](#) occurs in Queensland only. However, the implementation of new [water](#) tanks, combined with already warm summer temperatures, could enable the mosquito to re-emerge and further its current reach.

"Dengue risks will not be driven directly by warmer temperatures or changes in rainfall patterns," Beebe said. "Our summers already provide ideal conditions for dengue transmission around the country, but the introduction of government-subsidized water storage devices now adds

the ideal breeding ground for the dengue mosquito to re-emerge."

"While research is properly focused on the impact of anthropogenic climate change, this study highlights the need to look also at our responses to those changes and the outcomes they generate," he said.

The current dengue fever epidemic in far north Queensland is approaching 1,000 reported cases over the summer of 2008-2009.

Beebe and colleagues are continuing this research under the auspices of the CSIRO Climate Change Adaption National Research Flagship.

More information: Beebe NW, Cooper RD, Mottram P, Sweeney AW (2009) Australia's Dengue Risk Driven by Human Adaptation to [Climate Change](#). PLoS Negl Trop Dis 3(5): e429.  
[doi:10.1371/journal.pntd.0000429](https://doi.org/10.1371/journal.pntd.0000429)

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