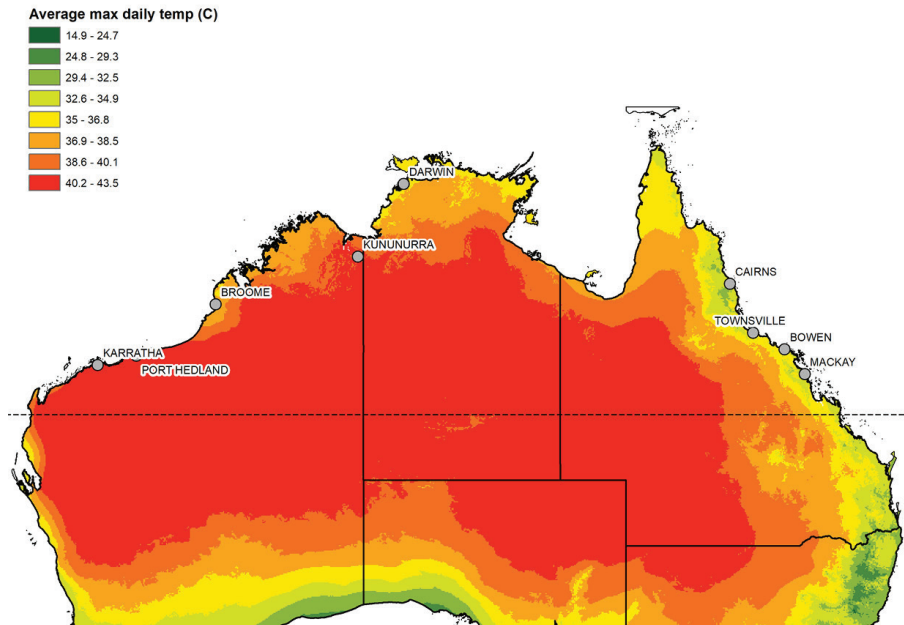


# AUDRC Research Note

## Projected Extreme Heat Stress in Northern Australia



## *Should we boost the population in northern Australia in the age of climate change?*

### Background

- Heat stress, resulting from elevated heat and absolute humidity associated with climate change, will increasingly occur in the tropics and parts of the mid-latitudes and could threaten the liveability and viability of many regions such as the Middle East Arabian Gulf, northern regions of South America, Central and Eastern Africa, Southeast Asia and northern Australia.
  - Concomitant with predictions of increased heat stress in northern Australia, the Australian Government's white paper 'Our North, Our Future' seeks to substantially boost the population in northern Australia.
  - This paper assesses the heat stress-related Wet Bulb Globe Temperatures (WBGT- a measurement of heat and humidity) the largest northern centres (Karratha, Broome, Kununurra, Darwin, Cairns, Townsville and McKay) could experience under Representative Concentration Pathways 6.0 and 8.5 by 2080.
- ### Key findings
- The paper finds that substantial population growth anticipated in the white paper could place significant future urban populations at risk from heat stress-related health issues.
  - All centres currently have significant WBGT exceedances of 26°C, which is problematic for very intense work. The 30°C WBGT threshold will be reached in the Darwin and Queensland centres in 40% of summer working hours. According to the ISO standard, at WBGT values between 30-32 °C, even

light work should be limited to 15- 30 minutes in the hour. In the Western Australian centres in 2080, WBGT is projected to exceed 32°C in 20-40% of summer daylight hours, making most outdoor work or exercise dangerous. This situation will negatively affect the liveability and even viability of these centres.

- Moreover, current climate adaptation policy does not consider the likely chronic heat stress issues.
- Future revisions of the National Climate Resilience and Adaptation Strategy should coordinate national and state policies to deliver northern population distributions less vulnerable to WBGT extremes in Australia. Governments in potentially affected regions should also consider long-term population and land-use planning in relation to emerging chronic heat stress.

### Links to related publications

- Bolleter, J., Grace, B., Foster, S., Duckworth, A., & Hooper, P. (2021). Projected extreme heat stress in northern Australia and the implications for development policy. Planning Practice & Research. doi: <https://doi.org/10.1080/02697459.2021.2001733>

### Contact

For further information, publications, media, and presentation opportunities, please get in touch with Bill Grace at [bill.grace@uwa.edu.au](mailto:bill.grace@uwa.edu.au).