

'Quite scary': Rising temperatures threaten water supplies in our big cities

Critical shortages of water for Sydney and Melbourne are predicted from climate change in coming decades, according to recent research.

Less rain, rising temperature and greater water demand “combine to substantially amplify the risk of severe water-supply shortage”, scientists calculated.

This new risk is worse than in past studies based on rainfall alone. Less reliance on “climate-dependent water supply” was urged, as populations grow in coming decades.

A threshold would be crossed as factors merged dramatically, with as little as a half-degree difference in global-warming scenarios in coming decades, from 1.5 to 2 degrees C (Paris Agreement), as reported in The Sydney Morning Herald*.

'Quite scary': Rising temperatures threaten Melbourne, Sydney's water security. SMH, 2 Aug 2019 .



Cataract Dam to Sydney's south, less than a third full, among the lowest levels for reservoirs in the Greater Sydney region. (Photo, Brook Mitchell)

CLIMATE-CHANGE THREAT

The research labelled climate change as “a major threat to the reliable water supply in many highly populated regions.”

Combining complicated statistical models with rainfall forecasts, the paper evaluated risks to Melbourne’s supply, using warming levels from the Paris Agreement. This predicted severe shortages to increase substantially with global warming, critically from 1.5 to 2.0 °C. Risks are worsened by increased water demand, the report said, but improved if costly desalination was used.

“It’s quite scary actually,” said Professor Ashish Sharma, at UNSW’s School of Civil and Environmental Engineering. “The implications for water security for this region are not good.”

“It is a double whammy,” he said. “Reduced access to water and increased water demand -- hence the vulnerability. The security of the water system reduces even more.”

Although based on the Melbourne catchment, it shares with Sydney some regional effects. Various scenarios were studied. Opinion in journals generally sees climate change as largely man-made, and fewer than 10% of climate scientists disagree.

[Link: <https://iopscience.iop.org/article/10.1088/1748-9326/ab26ef>]

* Amplification of risks to water supply at 1.5 °C and 2 °C in drying climates: a case study for Melbourne, Australia. Benjamin J Henley et al; 2 August 2019, **Environmental Research Letters**, Vol 14, No 8.