

CLIMATE STUDIES

Rising temperatures a 'scary' threat to city's water security

Peter Hannam
Environment editor

Sydney and Melbourne face rising threats to their water supplies from climate change as higher temperatures diminish inflows while pushing up demand, new research shows.

A paper published by the scientific journal *Environment Research Letters* shows a "substantially" amplified risk for Melbourne's water availability if global temperatures rise 2 degrees above pre-industrial levels rather than the 1.5-degree target set by the Paris climate agreement.

Separate research by the University of NSW into future rainfall and temperatures for some 222 catchments across Australia - some of which serve Sydney - found a marked increase in vulnerability of supply.

"It's quite scary actually," Ashish Sharma, a professor in UNSW's School of Civil and Environmental Engineering, said. "The implications for water security for this region are not good."

Warmer temperatures lift evaporation rates and dry out catchments, reducing the chance of the medium-sized floods that typically provide the great bulk of reservoir inflows in any one year, Professor Sharma said.

"It is a double whammy," he said. "You're having a reduced access to water and increased water demand - hence the vulnerability, the security of the water system, reduce even more."

Internationally, those moderate floods are expected to decrease at the rate of about 13 per cent each degree of warming, Professor Sharma said, noting current carbon emissions trajectories point to a 3.5-degree increase by 2100.

The dams serving both Sydney and Melbourne are hovering just above 50 per cent. with the for-

It's still winter, but parts of NSW are now officially in bushfire season

Drier and warmer than usual conditions in NSW have forced the Rural Fire Service to bring forward the start of its bushfire danger period for some regions.

Twelve areas - Armidale, Bega Valley, Eurobodalla, Glen Innes Severn, Inverell, Kempsey, Mid Coast, Nambucca, Port Macquarie Hastings, Tenterfield, Uralla and Walcha - are all now officially in bushfire season, the RFS announced yesterday. Traditionally, the season starts on October 1.

An RFS spokesman said it's unusual for the South Coast to begin

the season so early but dry conditions and heavy fuel load in the Bega Valley and Eurobodalla warranted the earlier start.

Without reasonable rain most of the rest of the state, including the Sydney region, will most likely begin their fire seasons on September 1, he said.

"Conditions across the state are drier and warmer than average, with more than 98 per cent of NSW drought-affected," NSW RFS acting Commissioner Rob Rogers said in a statement.

Jenny Noyes

mer's falling more rapidly in recent years than during the Millennium Drought earlier this century.

Desalination plants in both cities are ramping up. The Victorian government in April ordered its plant at Wonthaggi to deliver 125 billion litres for the 2019-20 year, while Sydney's Kurnell plant is nearing its full capacity of about 91 billion litres per year.

The first seven months have also been the hottest on record for maximum temperatures for Victoria and the second warmest for NSW, the Bureau of Meteorology said.

Benjamin Henley - who studies water resource impacts from climate change at the University of Melbourne and is the lead author of the research paper - said a warming world pointed to reduced rainfall in southern states.

"In the south, we're likely to face a long-term drying trend under climate change, and it has almost certainly started," Dr Henley said.

Even so, his team's work showed that for Melbourne at least, there was a "distinct difference" in the impacts for water security if tem-

perature rises were kept to 1.5 degrees rather than 2 degrees.

Lily D'Ambrosio, Victoria's climate change minister and acting water minister, said the warming was "a reality".

"We know we need to act now and plan for how we can better withstand increasingly high temperatures, reduced water availability, and the impact this has on the environment," she said.

Water efficiency measures, stormwater capture and making better use of sources independent of rainfall such as desalination, would be part of that planning, Ms D'Ambrosio said.

Fiona Smith, WaterNSW's executive manager water and catchment protection, said her agency was continuing to assess climate projections, noting some models projected increased rainfall.

"Research into climate change impacts are progressing but without conclusive findings accurate predictions for the east coast of Australia for water security purposes are not yet available," Ms Smith said.

2578
3 August 2019.

Dear Commissioner,
Re Hume Coal Project,
Please do not approve the Hume Coal Mine, the water must be preserved for we who need it, not for those who have no care for our country or environment.
Ann Mawson,

I really do care -
we must take notice of these expert scientists.