

Crumbling bores 'jeopardise nation's water'

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Fifteen thousand collapsing bores – and a half-billion dollar repair bill – are endangering the future of Australia's largest and most precious resource, its groundwater.

Australian homes, towns, cities, farmers and miners will rely increasingly on [underground water](#) as our population grows, surface [water](#) supplies dwindle, and as droughts multiply under a warming climate, the Director of the National Centre for Groundwater Research and Training (NCGRT), Professor Craig Simmons, said today.

"Groundwater accounts for about 90 per cent of Australia's total fresh [water reserves](#) – only a fraction is in rivers, lakes and dams on the surface," he says. "Currently it supplies 30 per cent of our daily water needs – and will be called on a lot more in future. It's vital for water supplies, agriculture, industry, mining and the environment."

The problem in Australia is that we really do not have a clear idea exactly how much groundwater there is, how rapidly it is recharged – or how quickly it is being depleted. What we do know is based on data largely supplied by 23,000 monitoring bores spread across the continent – more than two thirds of which are now falling into disrepair, Prof. Simmons says.

"It's an old saying: if you can't measure it, you can't manage it. Well that is rapidly becoming the case for the one resource which all Australians are really going to need if we are to inhabit this continent in the long term: [fresh water](#)."

Late last year a report by the National Water Commission (NWC) documented the parlous state of the nation's groundwater infrastructure, finding that 68 per cent of our 23,000 monitoring bores were more than 20 years old and at, or near, the end of their useful working lives.

The current replacement cost of inoperative monitoring sites was estimated at \$318 million, rising to over half a [billion dollars](#) if governments continued to ignore the problem, the NWC report indicated.

Prof. Simmons says there has been a steady increase in use of groundwater by Australian cities, towns and industries over the past 20 years, and especially during the Millennium Drought. "If we are unable to monitor what is going into or being taken out of our aquifers and how groundwater levels are changing, then some communities or industries may find they run out of water without warning," he said.

"Groundwater is out-of-sight, out-of-mind for most Australians. It is a lot harder to know what you've got in the underground water bank than in a river or a dam, where you can see the level daily.

"Our front line of defence against groundwater running out consists of thousands of monitors, most of which were installed during the 1960s, '70s and '80s – and are now well past their 'use-by' dates."

Groundwater is an important water supply in many remote and rural regions but urban groundwater use is expected to grow. Professor Simmons says that although only Perth among Australia's major cities relies extensively on groundwater, most were now starting to think about how groundwater might augment water supplies as their populations grew, surface resources became strained and the cost of building dams became prohibitive. Adelaide, for example, had previously used groundwater as an emergency drought water supply in the 1970's and

there was no reason why the same idea would not be revisited in times of severe drought.

"However, it is no good planning to use groundwater if you don't know how much you've got, or its rate of use and recharge.

"And it's not just what comes from the tap that's at stake. Water supplies for drinking (including bottled spring and mineral water which is sourced from groundwater), irrigation, agriculture, mining and important environmental flows are all critically affected," he says.

Another dimension of the issue is that, because most of the water in Australia's rivers is actually groundwater that has trickled in from underneath and the sides, understanding the groundwater cycle is also essential for managing major river systems and keeping them in good health, as is the case in the Murray-Darling Basin.

"We're seeing more and more disputes over groundwater, between farmers and coal-seam gas miners for example: these are an indication that Australia's total [water supplies](#) are becoming tight and under pressure and the basis for public concern. We simply have to have a better handle on the national water balance, surface and sub-surface, how groundwater systems work and their role in environmental water flows and other pressing [groundwater](#) related processes, such as mining and coal seam gas."

Prof. Simmons says that, despite nationwide complacency since the breaking of the last drought "the next drought is already on the way". The last 200 years have taught us major droughts can be expected several times a century.

Climate change is also linked to an increasing number of [droughts](#) around the world: there has been drought in a major grain-growing

region in each of the last seven years, driving high food prices.

"It's essential that as Australians, living in a dry continent, we don't get taken by surprise by the next drought – or the ones that come after it. Part of our strategy for avoiding severe stress on domestic water, the food supply and our native landscape is to monitor and measure underground water.

"At the moment we are like the driver of a car with an increasingly faulty speedo – racing towards the unknown without having much idea how fast we are going. It is time that everyone – governments, industry, municipalities and the community generally began to take this issue a lot more seriously."

More information: archive.nwc.gov.au/library/waterlines/90

Provided by National Centre for Groundwater Research & Training

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