

Media release

Australia's 'buried treasure' needs greater care

16 Jan 2012

Groundwater will be a major determinant of Australia's future as the climate warms and our population swells, a leading scientist cautioned today.

"Groundwater makes up 97% of the fresh water on the planet. It currently supplies around 20% of humanity's drinking water and 30% of our total water use," says Professor Craig Simmons, Director of the National Centre for Groundwater Research and Training (NCGRT).

"However it will be far more important in future, as surface supplies become ever more stressed due to competing pressures from evaporation, population growth, and the demands of industry, agriculture and the native landscape. "That's why it is vital that Australians better understand and manage our groundwater resources today."

In a future where rainfall cannot be relied on, groundwater represents Australia's national water security for the future, Prof Simmons states. "Where our national security is concerned, we should spare no effort to assure it."

Australia is a dry continent without glaciers, permanent snowfields or large and abundant permanent lakes, where evaporation generally exceeds rainfall across much of our arid and semi-arid continent. Groundwater is a critical resource for large parts of this country, he says.

"But because it is underground, we pay it insufficient attention – often treating it as a free resource, to be tapped at will. If that continues, we risk another tragedy of the commons. Such attitudes must change if we are to have sufficient water for the 31-42 million Australians which current estimates suggest could inhabit this continent in 50 years' time. Groundwater needs to feature much more prominently in our national and local water debates, planning and reform. The critical nexus between water, population, climate and energy must be a major driver for national water reform as we move into the 21st century, he says.

"Groundwater is, literally, buried treasure, and it is time Australians saw it that way. It is far and away our biggest water reserve. Over the long term it is potentially more valuable even than gold, oil, wheat or coal. And mining and agriculture rely heavily on it. Yet it receives a mere fraction of the attention devoted to these resources."

Prof. Simmons says groundwater is:

- Vital for many urban and rural users across Australia
- Widely misunderstood – as, for example, when surface and groundwater is 'double counted' leading to overestimation of the water resource
- Versatile – meaning it can be recharged, stored and desalinated for public consumption
- Critical - in that it sustains most of Australia's native landscapes, agriculture and other large industries as well as cities like Perth and Newcastle. It is an essential part of any strategy for 'water proofing' the country.
- Vulnerable - to salinity, industrial pollution, over-extraction, nutrients, pesticides, potential impacts of mining and coal seam gas, climate change, and ignorance of its extent, recharge rates and age.

Groundwater issues lie at the heart of the current national debates over the Murray-Darling Basin and coal seam gas, Prof. Simmons says. "Neither of these major issues can be satisfactorily resolved without a full understanding of groundwater and its impact on other resources, communities and industries," he adds.

Despite this, he says, groundwater remains the 'poor cousin' in the national water debate – often overlooked, insufficiently measured and monitored, frequently misunderstood or taken for granted, and increasingly over-exploited.

The National Centre for Groundwater Research and Training is an Australian Government initiative, supported by the Australian Research Council and the National Water Commission.

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“It faces intensifying pressures – from population growth (especially along the coast), from climate change, from mining and coal seam gas production, from agriculture and from the need to restore and safeguard the Australian landscape, our rivers, lakes and wetlands, which all depend on groundwater.”

A recent CSIRO study indicated that groundwater was heavily over-allocated in seven of the Murray-Darling Basin’s 20 irrigation areas. Across Australia generally, groundwater supplies are in fair to good condition.

But all groundwater resources are threatened by droughts and climate change, which can dramatically reduce the rate at which our aquifers recharge. When rainfall declines, most of the available moisture is taken by evaporation and surface vegetation and has little chance to get into groundwater. Thus, a small decline in rainfall can lead to a very large reduction in aquifer recharge.

“Yet the first thing people do when a drought comes, is start extracting more groundwater.”

Like the continent itself, Australian groundwater is often very old – some of it recharged ages ago in ancient wetter climates. “We have to husband these resources with great care so they are available if and when we really need them – not extract them as if there was no tomorrow,” Prof. Simmons says.

“Also, with the breaking of the 10-year drought, apathy towards water has again set in, in some quarters. We have seen many droughts in this country throughout recorded history. We are a land of drought and flooding rains. We must accept that droughts will be a part of our future. At the same time, we have an increasing population as well as growing demands on water from agriculture, industry and mining. We need to start thinking now about how we will meet Australia’s water requirements in future droughts – and with, potentially, double our present population.”

“The key to effective groundwater management is knowledge: knowing with precision how large is the resource, how long it takes to recharge, how it connects to surface waters, and how quickly it is being depleted by competing social, economic and environmental demands on it. This is at the heart of effective policy.”

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