

In Brief

More resources pumped into groundwater research

The Minister for Climate Change and Water, Senator Penny Wong, recently announced initiatives to improve the management of Australia's groundwater resources. These included the launch of a National Centre for Groundwater Research and Training, a comprehensive 'atlas' of groundwater-dependent ecosystems, and groundwater recharge 'rechner' tools and manuals for more equitable sharing of water resources between regions.

Groundwater accounts for more than 30 per cent of Australia's total water consumption. Because it is managed separately from surface water, the same water can be allocated twice – once in the groundwater management plan, and again in the surface water management plan – leading to water over-allocation.

Another difficulty in managing interconnected streams and aquifers is that it can take from days to decades for the effects of taking water from one system to be apparent in the other.

'We need to better understand the relationship between groundwater and the health of the rivers, streams and wetlands that support



Underground aquifers supply 30 per cent of our water, yet much more needs to be known about their extent and connectivity with surface water systems. Gregory Heath, CSIRO

vulnerable ecosystems,' said Minister Wong.

'The comprehensive atlas of groundwater-dependent ecosystems across Australia will give water managers vital information about the ecological requirements of the groundwater systems they deal with.'

CSIRO will lead the project to develop two recharge rechner tools and associated manuals, which will enable water managers to determine the recharge rates that contribute to regional water balances for more equitable water sharing of groundwater resources.

Participants in the National Centre for Groundwater

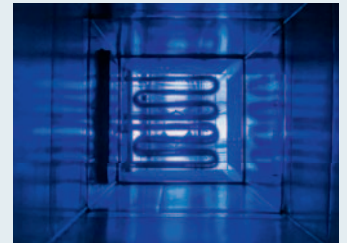
Research and Training include Flinders University, Australian Research Council, National Water Commission, University of New South Wales, University of Queensland, Australian National University, CSIRO and Geoscience. An important function will be the training of scientists in advanced hydrogeological and related technologies.

In related news, the National Water Commission has released a 'Waterlines' report produced by CSIRO on Managed Aquifer Recharge (MAR).

MAR is the controlled addition of an existing water source to underground aquifers. The technique can provide effective storage for desalinated seawater, recycled water, excess stormwater and even mains water and is being used at various scales around Australia, from backyard systems to large-scale augmentation of drinking water supplies.

A report by the National Water Commission last year warned that the increasing use of water from underground aquifers had become 'an unacceptable risk', and recommended urgent action to return over-allocated systems to sustainable levels.

Air-conditioning from the sun



Part of the climate testing rig used for developing the cooling system. CSIRO

Scientists from CSIRO are working on ways to harness the sun's warmth to cool homes and offices. Solar cooling would consume less electricity and produce fewer greenhouse gas emissions than a conventional mechanical air-conditioner.

'Solar cooling utilises heat from solar thermal collectors to generate cooling for building air-conditioning,' says Dr Stephen White, the leader of the Energy Transformed Flagship's solar cooling research project.

'Most conventional mechanical air-conditioners use high-emission electricity derived from fossil fuels to provide the energy to compress a refrigerant and cool a building. This typically accounts for 20–30 per cent of building energy consumption and greenhouse gas emissions.'

'The solar cooling technology we are developing directly uses the natural heat from the sun to power a thermally driven cooling process. It is able use that heat in conjunction with an absorbent material – or desiccant – to dehumidify and cool air.'

'This new type of desiccant cooling promises to be simpler and more cost-effective than absorption chillers.'

Because demand for air-conditioning is normally at its highest on hot sunny days, solar cooling has the potential to reduce peak demand on the electricity grid.

Scouts lead community in water-saving efforts

Scouts Australia has installed 1000 water tanks across the country in what they claim is the largest community water-saving project undertaken in Australia.

Scouts rolled out the project in collaboration with Storm Sustainability. The two groups successfully applied for a federal government grant of more than \$17.7 million to carry out the installations.

Organisers say one of the drivers of the project was the

recognition that the 60 000 Scouts across Australia were our next generation of water savers, and the best way to educate them about the benefits of water saving was by hands-on experience.

Over the next three to four years it is estimated this project will save 3000 megalitres of water – equivalent to 3000 Olympic-sized swimming pools or more than 10 billion glasses of drinking water.



Organiser of the national water tank installation project, David Jones OAM, with Scouts and Federal Minister for Defence Science and Personnel, Warren Snowden. Scouts Australia