Gnangara Sustainability Strategy
Managing land and groundwater for the future

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October 2007
What is the Gnangara groundwater system and how is it used in Perth?

The largest source of water for the Perth metropolitan area is north of the Swan River. Rainfall seeps through our soils and becomes part of the Gnangara groundwater system. Due to declining rainfall, the amount of water used and how much goes back into the groundwater system has become a major concern for everyone who lives in Perth.

The groundwater stored in the Gnangara system provides us with 60 per cent of Perth’s scheme water needs. Most of this water is mixed with water from other sources such as dams, and then treated and delivered to our homes.

Large volumes are used by agriculture, local government and household garden bore users. It is also an important source for forestry and maintaining our precious wetlands and native vegetation.

The Gnangara groundwater system

The Gnangara Mound is the name given to the sandy water table on the Swan Coastal Plain north of the Swan River. Its name came from the landform that literally forms a mound across this area. The mound is about 70 metres above sea level at its highest point, and slopes away east to Ellen Brook, south to the Swan River, west to the Indian Ocean and north to Gingin Brook. The Gnangara Mound is the ‘superficial aquifer’. Underneath the superficial aquifer are two geological formations: the Leederville and Yarragadee aquifers. These are known as ‘confined aquifers’ because they have layers of sediment that effectively encloses the water they contain. There are also a number of smaller aquifers such as the Mirrabooka and the Kings Park aquifer.

The ‘confined aquifers’ and the ‘superficial aquifer’ together make up the Gnangara groundwater system.

Why do we need a Gnangara Sustainability Strategy?

Perth is receiving less rainfall. Climate scenarios predict it’s not likely to get any better. With declining rainfall and a population set to increase by 40 per cent by 2030, it is vital that we continue to look for the best ways to protect our existing water supply. The State Government has committed $7.5 million to develop the Gnangara Sustainability Strategy, which is an across-government initiative working on an action plan that will recommend options to ensure the sustainable use of water for drinking and commercial purposes and to protect the environment.

The Department of Water has joined forces with the Department of Agriculture and Food, Department of Environment and Conservation, Department of Planning and Infrastructure, Forest Products Commission, Water Corporation and CSIRO. This consultative approach will ensure that we can address land, water and biodiversity issues on the Gnangara system through a transparent, cooperative framework for the benefit of all groundwater users.

In 2009, a number of proposed land use options will be presented to the community in a draft strategy. These may include and are not limited to:

• exploring alternative land uses after the pines are cleared;
• establishing a horticultural precinct using treated wastewater;
• recycling wastewater for other uses;
• changing vegetation management such as burning Banksia woodland to increase recharge and maintain biodiversity values;
• revising groundwater allocation to public and private water supplies; or
• a combination of these and other options.

What else is happening to help solve the problem?

The State Government has actively pursued better ways to manage our water. Some of these initiatives are:

• the Waterwise Rebate Scheme;
• water efficiency measures;
• licensing water use;
• better management of bore water use;
• metering to provide better information on groundwater use;
• State-wide groundwater investigation starting with the Perth Basin;
• managed aquifer recharge;
• support for water research and development; and
• promotion of good water use through the Water Awards.

You can find out about all of these initiatives and more at www.water.wa.gov.au.

How can you have your say?

The draft Gnangara Sustainability Strategy will be available for public comment in 2009. Meanwhile, check out our website at www.gnangara.water.wa.gov.au for information about the issues and some of the decisions that need to be made. The website also provides an opportunity for you to tell us what you think, to register your interest in being kept up to date or to be invited to a workshop.