



August 2013

Looking after all our water needs

Newsletter 4

Gingin groundwater allocation plan released for public comment

The Department of Water has released the *Gingin groundwater allocation plan for public comment* and we are seeking your input. The public comment period will be open until 5:00 pm Friday 6 December 2013.

Since 2010, we have maintained contact with our stakeholders to discuss water management, present information and answer licensing questions. Stakeholders have provided us with information about declining water levels in their bores as well as valuable feedback relating to the values of Gingin Brook, Moore River and other groundwater-dependent ecosystems.

For the next stage of consultation on the plan, we are holding two information sessions during the comment period:

- Thursday 12 September 11.00am to 12.00pm, Dandaragan Community Resource Centre
- Thursday 19 September 11.00am to 12.00pm, Gingin Recreation Centre.

In this newsletter, we provide a brief overview of:

- water management in the plan area
- how we consider water for the environment
- how to access groundwater monitoring information on our website, and
- a guide to making a submission on the plan.

Thank you for your valuable input to our planning work to date. I look forward to receiving your submissions. For more information on the Gingin plan area or for licensing queries please contact the Swan-Avon regional licensing team on 6250 8000.

Don Cummins, Regional Manager

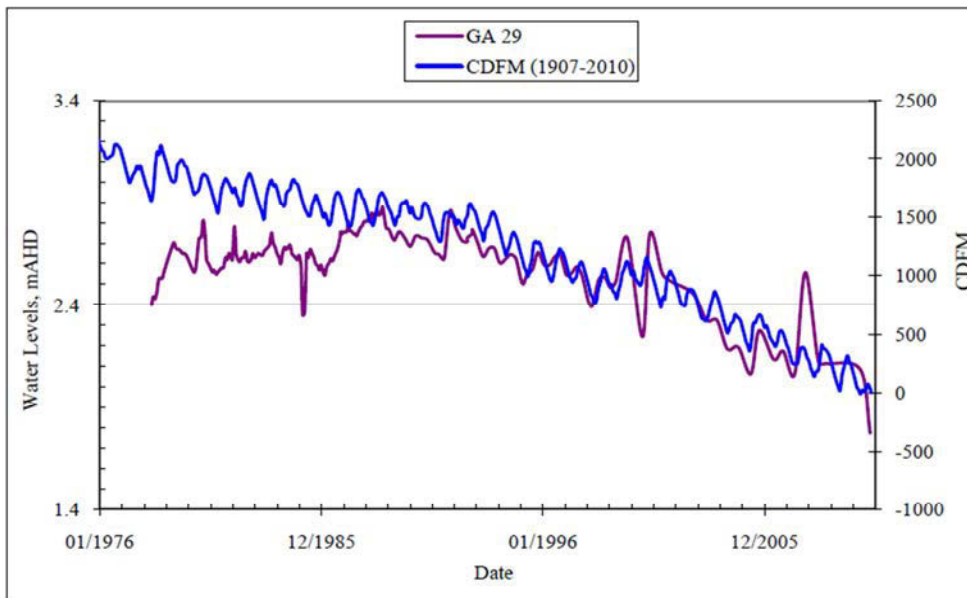
Managing groundwater in the Gingin plan area

The new Gingin plan describes how we have updated our management of the groundwater resources in a drying climate. There has been steadily less recharge to the aquifers from rainfall, resulting in declines to the water table and less water flowing in the rivers. At the same time, demand for groundwater has been steadily increasing over the last decade. As shown in the figure below, despite an increase in licensed use and abstraction in the plan area, groundwater levels are declining at a similar rate to rainfall decline.

With less water available in our aquifers, this plan improves water management by:

- reducing allocation limits where there is threat to the security of water entitlements,
- accounting for environmental water needs
- introducing licensing rules, and
- focusing our monitoring and evaluation efforts in the region.

The *Gingin groundwater allocation plan* covers the area north of the Gingin Brook to Moora and Wedge Island. Areas south of the brook are managed under the *Gnangara groundwater areas allocation plan*. Surface water within the plan area is managed through the *Gingin surface water allocation plan*.



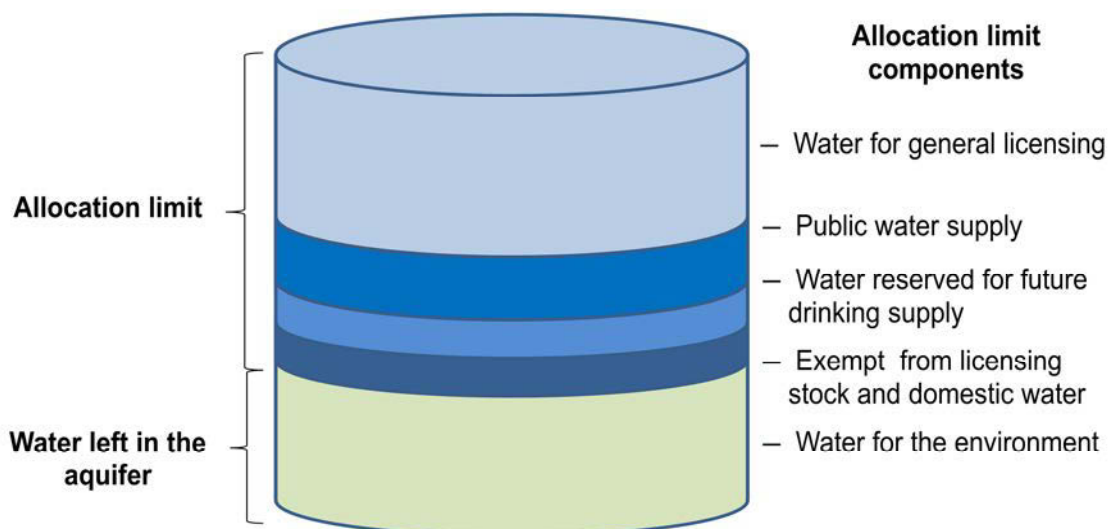
Correlation between changes in rainfall (Cumulative Deviation From the Mean - CDFM) and a hydrograph from a superficial aquifer monitoring bore (GA29) in the Gingin plan area.

What is an allocation limit?

An allocation limit is the annual volume of water that can be abstracted for use from a defined management area. Individual water licence entitlements are granted, subject to assessment, up to the allocation limit. Equivalent terms from other states include 'annual extraction limits', 'sustainable diversion limits' or 'consumptive pools', which may be varied each year. In Western Australia, groundwater allocation limits are generally set for longer periods of time, and are reviewed through planning.

Allocation limits for the aquifers in the Gingin plan area are based on the:

- recent and projected rates of aquifer recharge
- proportion of aquifer recharge needed to maintain the water resource viable for use
- the proportion of aquifer recharge needed to support flow in groundwater-dependent streams and the health of groundwater-dependent ecosystems
- current water use and the projected demand for water
- scope to manage localised risk through licence assessment and licence conditions.



For administrative, accounting and reporting purposes, the department subdivides an allocation limit into different components: general licensing, public water supply licensing, public water supply reserve and water exempt from licensing. The allocation limit does not include water that needs to remain in the aquifer for the dependent environment and to maintain the aquifer.

What is environmental water?

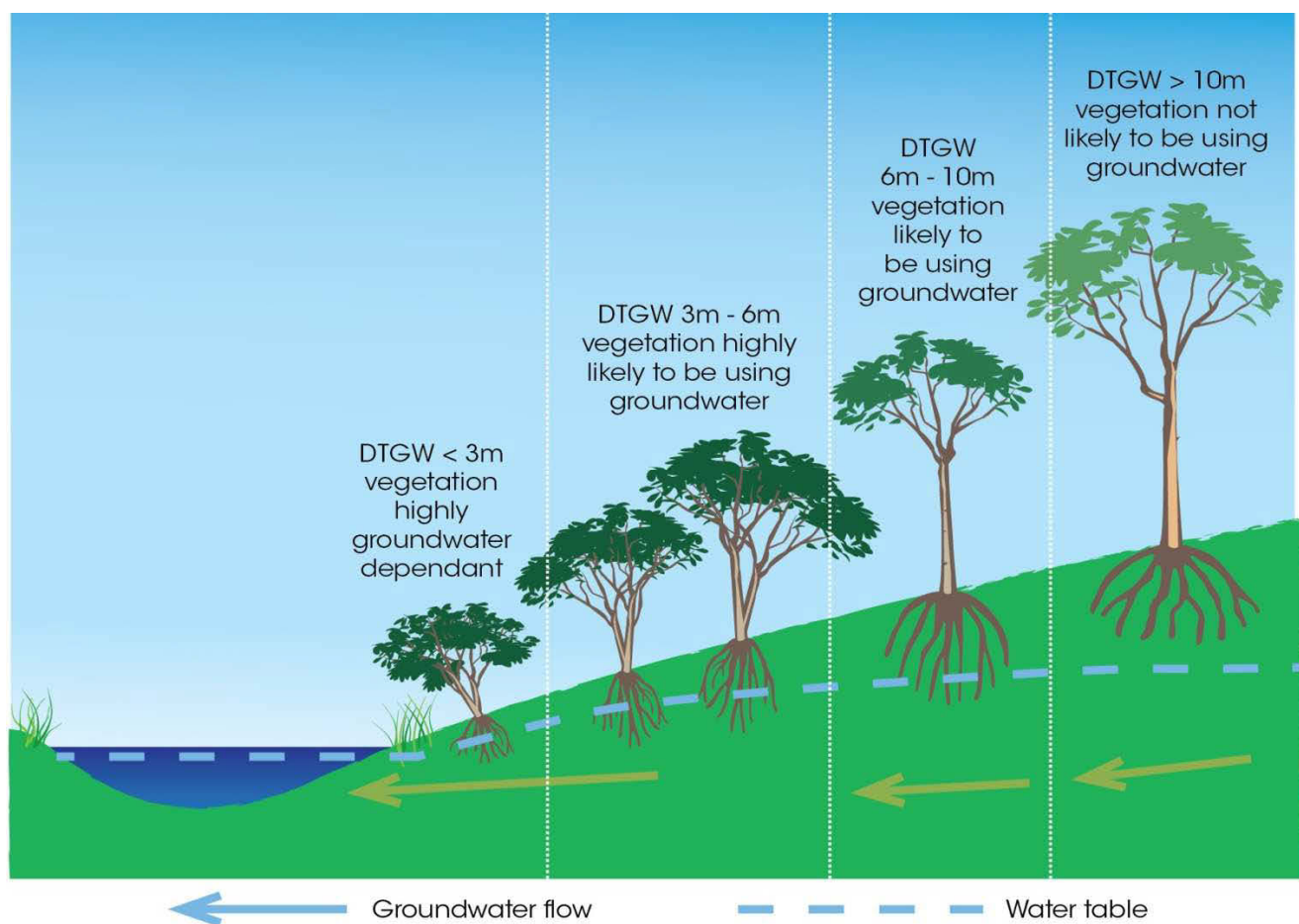
Water for the groundwater-dependent environment relies on groundwater levels. If there was too much abstraction and not enough recharge, groundwater levels and throughflow would diminish and bores would become unreliable or water quality could worsen.

In the *Gingin groundwater allocation plan*, a proportion of water was calculated for each subarea to remain in the aquifer for its maintenance and to contribute to the health of the wetlands, rivers and vegetation that are dependent on shallow or outcropping groundwater.

The Gingin groundwater area has regionally important wetlands, watercourses and other ecosystems that are groundwater-dependent. For example, flow in Gingin Brook is partly fed by groundwater seepage from the superficial, Mirrabooka, Leederville and Leederville-Parmelia aquifers. The North Moore River and South Moore River subareas also contain many examples of groundwater-dependent features.

Groundwater-dependent features are affected by changes in the depth to the water table. The allocation limits and local licensing rules in the *Gingin groundwater allocation plan* have been designed to leave a sufficient proportion of the long-term aquifer recharge in the aquifers to prevent rapid changes in groundwater levels.

Our studies show that vegetation situated above areas where groundwater is less than 10 m is likely to be using groundwater, and surface water sites with a depth-to-groundwater (DTGW) of less than 3 m are very likely to be groundwater-dependent.



Shallow groundwater supports terrestrial vegetation and surface water features with highest dependencies within the 0–3 m and 3–6 m DTGW categories.

What does the plan change?

The department has reduced allocation limits and public water supply reserves in most aquifers in the 2013 plan. This means that we will be licensing less 'new' water than what had been previously allowed for, but this won't affect existing licensees who are compliant with their licence conditions. The allocation limits and local licensing rules established in this plan should maintain reliability in most resources and reduce risk of over-abstraction. Impacts on groundwater-dependent rivers, wetlands and the seawater interface as well as impacts between users will be minimised.

The total allocation limit for consumptive use is 235 gigalitres per year (GL/year) across 35 resources. Currently, about 141 GL/year is issued as licence entitlements, and 41 GL/year is reserved for future public water supply. Some resources are now fully-allocated and no new water will be released in those subareas. Demand for new water will be met through efficiency gains and trading. Water is still available in some resources in the plan area, particularly north of Moore River and near Dandaragan and Moora. Depending on land use and zoning, access to some of this water may be subject to approvals from other agencies.

We have revised the groundwater monitoring program to ensure that the results allow us to track aquifer progress each year. The effects of pumping and climate will need to be monitored on an ongoing basis throughout the life of the plan to inform us of the plan's effectiveness. The plan and its supporting methods document give detail of the resource monitoring schedule.

New policy items have arisen due to recent hydrogeological investigations – such as recognition of the importance of surface water/groundwater interaction, and the important role some aquifers have in contributing to the base flow of the Gingin Brook and Moore River. This groundwater plan complements the objectives of the *2011 Gingin surface water allocation plan* in retaining portions of recharge from aquifers identified as contributing to surface water, and in setting local licensing policy that will manage groundwater abstraction that could impact on the Gingin Brook.

Future public water supply

Gingin has been flagged as a potential future source option for scheme water for many years. The plan includes sufficient reserves of water for the projected growth of towns within the plan area, while the balance remains a potential future source option for Perth scheme supply. The drinking water reserves are distributed across nine resources in the plan area.

We have reduced the size of the public water supply reserves in the Gingin plan area. The reserve volumes were considered in terms of the drying climate and the need for general licensing. These reserves are mostly beneath Crown land or conservation reserves and therefore unlikely to affect private licensees. To access these reserves, water service providers would follow established processes, at a time to be determined by government. This will include justification of need and feasibility of the supply scheme, land access arrangements and licensing requirements.

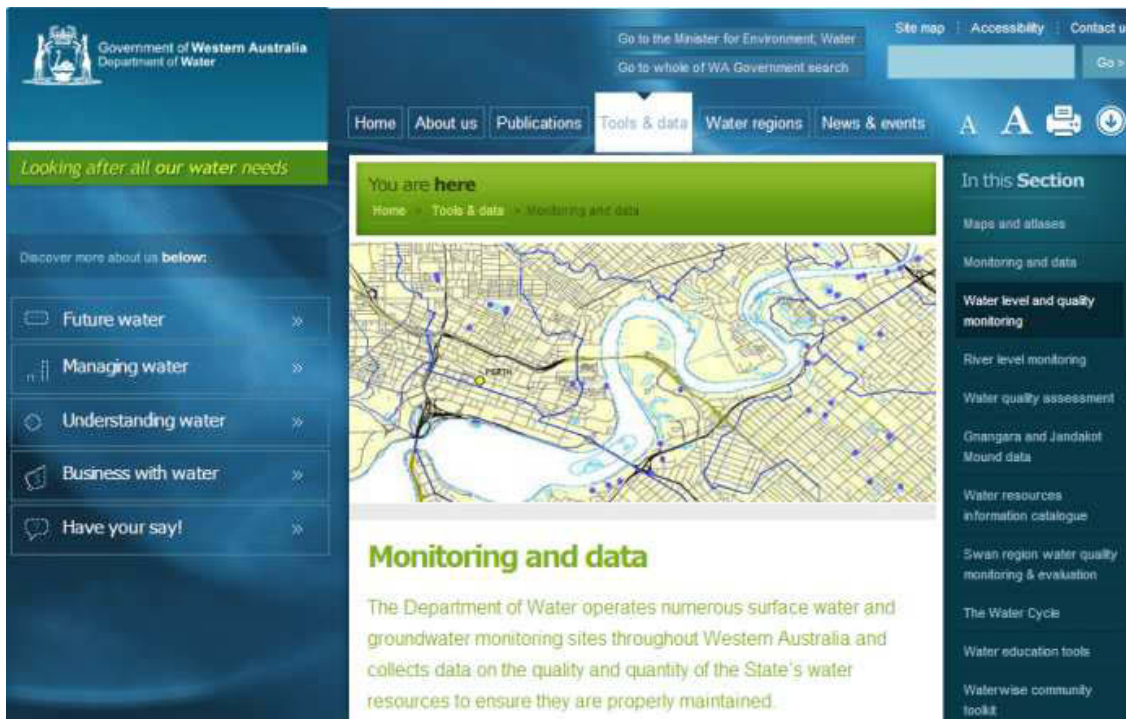
New trading rules for the Leederville-Parmelia aquifer

The Leederville-Parmelia aquifer is currently over-allocated and groundwater levels are declining in the southern portion of this aquifer. To help prevent further groundwater declines in this portion, the plan introduces trading zones that reduce abstraction from the southern zone and encourage movement of water use to the north. As the aquifer is important for discharging groundwater to the Gingin Brook, the new trading rules will also assist in returning flow in the brook.

Obtaining monitoring data from our website

Water resource monitoring information is freely available from the Department of Water website. The following steps show how you can access this information:

1. Navigate to the Department of Water's [website](#) homepage, click on the "Tools and data" tab at the top of the page, then the "Monitoring and data" tab. Click on the "Water level and quality monitoring" tab located on the right hand side of the page.



2. Click on the "Water resources data" link in the text. This will open the "WRDATA" page.
3. Select "Summary Data for Streamflow Sites" or "Summary Data for Groundwater Sites" to open a list of monitoring sites for either surface water or groundwater. There are three surface water monitoring sites and 23 groundwater monitoring sites for the Gingin surface water and groundwater allocation planning areas:

Surface water monitoring sites:				
617058 (Gingin Brook)	617165 (Molecap Hill)	617003 (Bookine Bookine)		
Groundwater monitoring sites:				
3A	AM1A	CS28D	GGB14A	GL6A2
5A	CS9I	CS31D	GGB14B	GL6W
10B	CS14D	GB3	GL1A1	GL7W
20A	CS25D	GGB2A	GL1A3	
21A	CS27D	GGB8B	GL4A1	

Either scroll the list to find the site you want or press the "Ctrl" and "F" keys on your keyboard to open a search function to find the site number you are interested in. Clicking on your selection will bring up links to the available information for that site, including plots. For groundwater sites, there is also an option to download the data to your computer. Please note that data records will vary, depending on the length of time the site has been in operation and how often the data is uploaded.

You can also access 7-day flow records for surface water through our "River Monitoring" database. To do this, repeat Step 1. Click on the "River level monitoring" tab and then the "graphical form" link under "River level data". Select "Search" from the menu, then "Monitored Sites - Water Level" and enter the Station ID.

For technical queries on these databases our Water Information Officers can be emailed on:

<mailto:waterinfo@water.wa.gov.au>.

Making a submission during the public comment period

We want to hear from you – Submissions received during through the public comment process and feedback from formal consultation activities will be considered to finalise the plan.

A copy of the plan document and its supporting reports are available at:

www.water.wa.gov.au/allocationplanning

The Gingin groundwater allocation plan will be open for public comment from Monday 5 August 2013 to **5.00pm Friday 6 December 2013**.

Who can make a submission? Any individual or organisation can make a submission during the public comment period.

Do I need to make a submission? The information you provide us in a submission is important as it helps us improve the plan. It may help us refine our decisions or offer a better alternative to the local rules we have proposed.

What can I put in my submission? This is your opportunity to comment on any aspect of the plan document. To help our collation, please be specific about which section or element of the plan you are commenting on.

What format can my submission be in? You are welcome to make your submission in any format that works best for you. There is no set format for a submission and you could decide to send a letter, email or fax. We do accept handwritten submissions, but they must be legible and suitable for photocopying. If required, we can also make arrangements to receive verbal submissions.

What contact details do I include? We recommend that a return address for correspondence and a contact telephone number is provided with your submission. That way, we can get in touch with you if we need to. If you send your submission by email, don't forget to include the name, postal address and phone number of the person or organisation making the submission.

How will I know how you have responded to my submission? We review and consider all of the comments we receive to help finalise a plan. We explain how suggestions have been used in a statement of response document which is released with the final plan.

Is my submission confidential? We don't publish individual submissions. Each comment we receive is grouped for the statement of response and we do not attach names to individual comments. But, unless you request that your submission is treated confidentially, we will include your name (or the business or organisation name) in the list of respondents. In some cases, we may quote directly from your comments in our statement of response. Please state clearly if you do not wish us to do so.

More Information on our planning process is available on our website, and detailed information about licensing, through our Swan-Avon regional office on 6250 8000.