



Cockburn

groundwater area water management plan

Evaluation statement 2012–2015

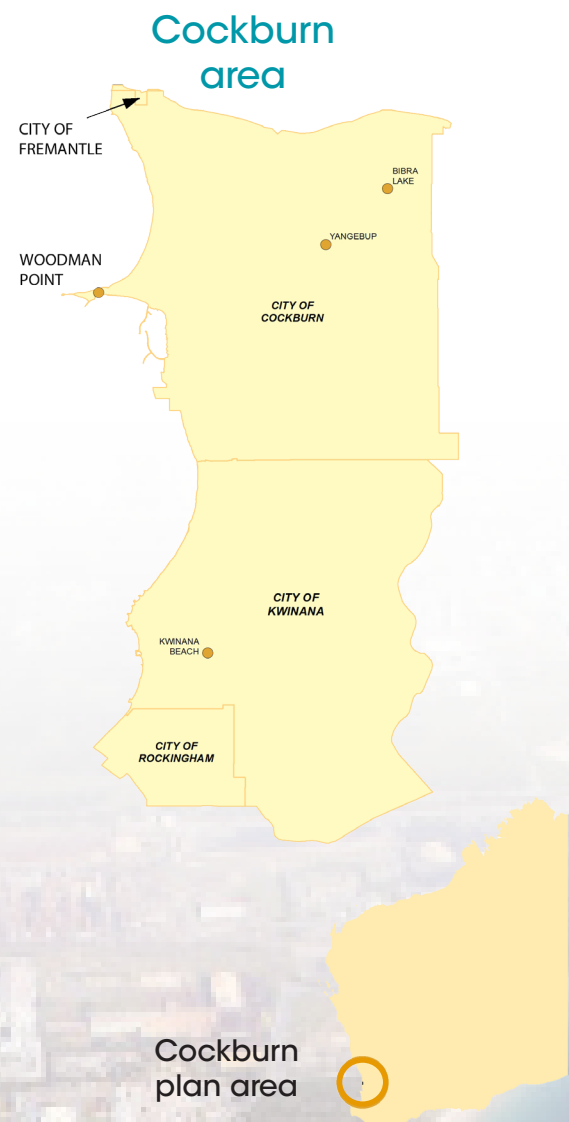
This is the second evaluation statement of the Department of Water's Cockburn groundwater area water management plan (Cockburn plan) published in 2007. This statement summarises how the department has implemented the Cockburn plan between 2012 and 2015. The first evaluation statement covered the period 2007 to 2011.

The evaluation showed that over the past four years we have consistently implemented the plan. Yet our resource evaluation showed that water level decline continues to occur at some sites and that the seawater interface moved further inland. This means that the volume of groundwater currently being abstracted is likely at its limit. This, coupled with our current understanding of climate science, led us to review the 2007 allocation limits for the Superficial aquifer and identify where we need to focus and revise our management.

We are continuing to work with licensees, local shires, land developers and industry to share water across the Cockburn groundwater area.

The Cockburn groundwater system

The shallow Superficial aquifer in the Cockburn groundwater area is a local water source for industry, public open space, horticulture and domestic gardens. It also supports the internationally significant, Ramsar listed, Thompsons Lake and other ecosystems of local social, cultural and recreational importance. The confined Leederville and Yarragadee aquifers provide water for industry and are fully allocated.



Improving how we manage water

Our main achievements between 2012 and 2015 were:

- Undertaking work to review allocation limits in the Superficial aquifer to reflect water availability under a dry climate to 2030. The Perth Regional Aquifer Modelling System (PRAMS) and the department's climate tool were used to do this work; available at www.water.wa.gov.au.
- Consulting and collaborating with industry to deliver the Western Trade Coast heavy industry local water supply strategy. This strategy identifies alternative water supplies to meet demand as groundwater is fully allocated.
- Incorporating licensee's monitoring data with our own to evaluate resource performance. This was vital to confirm that seawater intrusion was occurring in the Kwinana Industrial Area.
- Identifying that seawater interface monitoring is the key to improving our management. We will address this by gradually implementing a seawater interface monitoring program across the Kwinana-Peel coast from Coogee to Preston Beach.
- Identifying that licensed entitlements need to better match what can actually be taken out of the resource under the drying climate. Modelling showed that if some licensees abstract their full entitlements water levels would decline and the seawater interface would intrude further inland. This licensing work is already in progress.
- Reducing abstraction from the Yarragadee aquifer to the allocation limit, in line with the plan.
- Developing environmental values and depth-to-groundwater spatial layers across the Peel Region to assist in licence assessment.

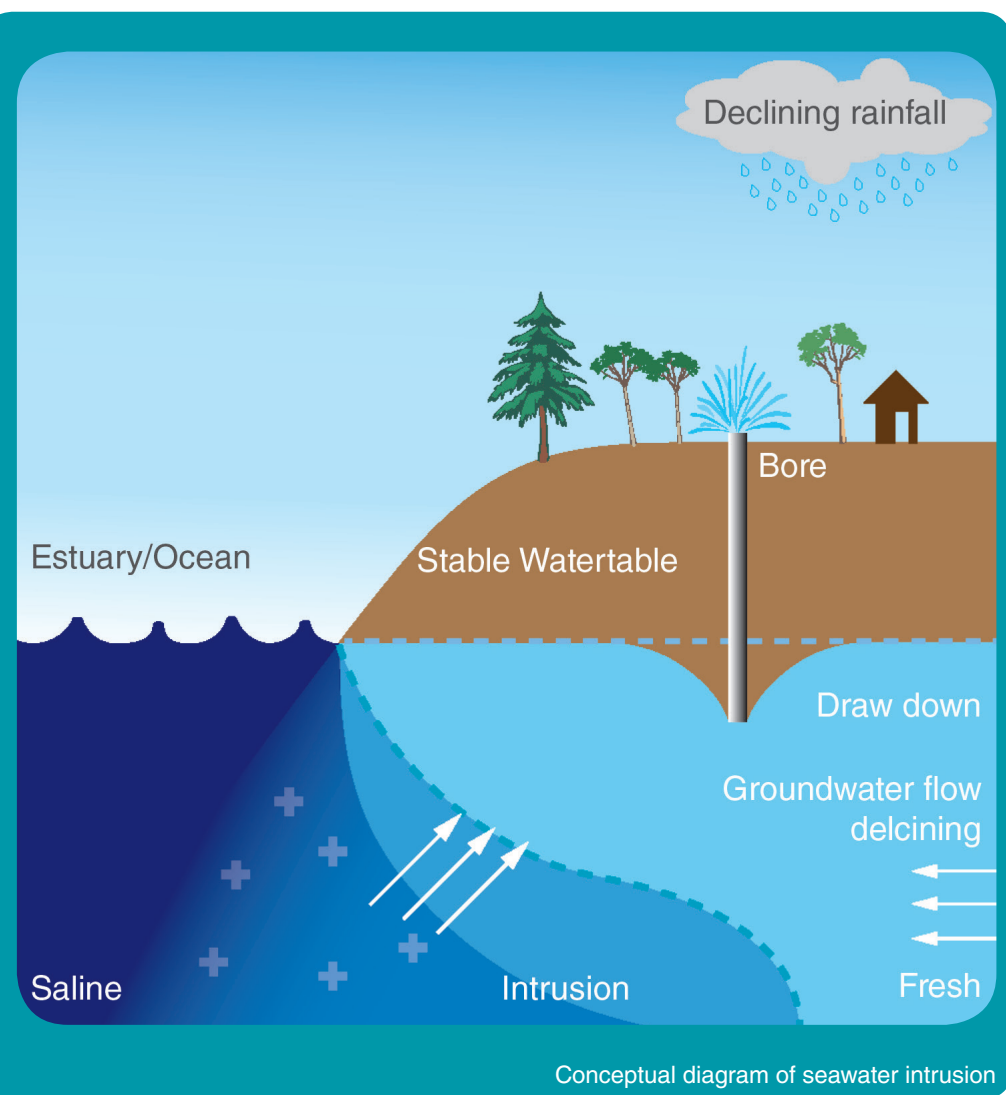


Thomsons lake

Status of water resources

Water levels in the Superficial aquifer were variable over the evaluation period. In general, there were declines in water levels in bores along the coast, increases in the east and stable levels in central bores across the plan area. Groundwater levels have recovered since the dry year in 2010, when at most sites this was the lowest level on record. This is likely due to a combination of higher rainfall years since 2010 and urban development which increases recharge.

Water level decline in coastal bores also reflect a slow pattern of seawater intrusion as fresh groundwater is slowly replaced by seawater. Departmental and licensee monitoring data show that the seawater interface now extends onshore about 300 metres in Munster and up to one kilometre in the Kwinana Industrial Area. At Kwinana, intrusion has resulted from localised abstraction.



Water pressure levels in the confined Leederville aquifer have stabilised, but Yarragadee levels continue to decline. Abstraction from the Yarragadee was reduced to address this however, abstraction from outside of the plan area continues to impact on pressure levels and contributes to declines. This issue will be managed on a regional scale through planning for the adjoining groundwater areas.

In 2010, water levels in four out of six Ministerial criteria sites in the Cockburn groundwater area were compliant. This increased to five out of six in 2014–2015. Banganup Lake returned to compliance after four years of low water levels.

This improvement is likely also a response to our work with Water Corporation to move public water supply abstraction on the Jandakot Mound away from key environmental sites.

More detail is provided in our Jandakot Mound Ministerial compliance reports, available online at www.water.wa.gov.au.

Status of water use

There is continued high demand for groundwater in the Kwinana Industrial Area and some new demand in Wattleup for horticulture. However, the volume of groundwater licensed across the Cockburn plan area did not change significantly over the evaluation period, with an increase of around 0.2 GL/year.

Licensee metering data from the Superficial aquifer shows long-term underuse of some licensed entitlements. To equitably share the resource we are working with licensees to identify future water needs. We aim to match licensed entitlements with what is actually needed by proponents, as well as the volume that can be taken sustainably.

Projected water demand for the Western Trade Coast industrial expansion could be significant, up to an additional 25 GL, which cannot be met by groundwater. Existing supply options, including groundwater, are already nearing full capacity. Alternative water supply options to support industrial expansion were investigated by the department and are presented in Western Trade Coast heavy industry local water supply strategy.



Aerial photograph of Kwinana industrial area

Our response and future planning

The 2007 Cockburn plan has been appropriate for managing groundwater allocation in this area to date. However, we now need to adapt our management approach given:

- the drier climate
- increased demand for water from industry
- the threat of seawater intrusion into the Superficial aquifer
- continued non-compliance at some Ministerial criteria sites.

The Superficial aquifer allocation limits review is complete and we are now preparing a new water allocation plan for the Cockburn groundwater area.

We will release the new plan for public comment and a report outlining the method we used to update the allocation limits early next year. These will explain why the amount of water available for licensing from the Superficial aquifer was reduced and the decisions we made to balance the competing needs for water under a drier climate.

The new allocation plan will include more precise water management objectives. It will also outline what actions we will take to achieve them. The plan includes a monitoring program that uses new and existing infrastructure to assess the resources' response to management.

Stakeholder engagement is an integral part of this process and we will continue to keep key groups and individuals informed of our work in the Cockburn groundwater area.

Further information

For licensing information, please contact our Peel regional office. You can also view the latest water allocation and availability information through our water register via our website.

If you would like to receive updates on the next Cockburn groundwater allocation plan, please register your interest by emailing: allocation.planning@water.wa.gov.au

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