



Kemerton

groundwater subareas water management plan Evaluation statement 2007–2015

Groundwater resources in the Kemerton area are managed using the Department of Water's South West groundwater areas allocation plan and the Kemerton groundwater subareas water management plan (Kemerton plan), which both provide local licensing policies and rules for the area. This is the first evaluation statement for the Kemerton plan. It summarises how the department has implemented the Kemerton plan since it was published in 2007. It also describes how the department has improved management of the groundwater resource and how this will continue into the future.

Groundwater is used in the Kemerton plan area for irrigating public open space in Australind, for agriculture in the Australind and Myalup subareas, and for industry growth in the Kemerton Industrial Park.

Information from two major projects will be used to better manage groundwater levels and salinity in a new allocation plan due to be prepared after the completion of the Royalties for Regions funded Water for Food investigation in 2017.

The \$5.7 million Myalup-Wellington Water for Food project, funded by Royalties for Regions, was initiated in February 2015 to support potential expansion of the Myalup Irrigated Agriculture Precinct. The project will identify potential new water sources and land availability options while taking into account the water level and water quality declines we have observed in the northern subareas of the Kemerton plan area.

Our \$1.6 million South West groundwater assessment project, funded by Royalties for Regions, will improve our understanding of the aquifers in the southern subareas of the Kemerton plan area.

We are continuing to work with licensees and stakeholders so that we can support growth and development of industry and horticulture, while sustainably managing the existing groundwater resources.





Improving how we manage water

Major achievements in the Kemerton plan area between 2007 and 2015 are:

- Groundwater from a deep aquifer has been secured for the Kemerton Industrial Park.
- We have supported agricultural expansion in the Myalup Irrigated Agriculture Precinct via additional temporary water supply from the Kemerton North subarea-Leederville aquifer.
- We have supported water trading and water efficiency in the Myalup Irrigated Agriculture Precinct and provided regular updates on groundwater levels and water quality to growers.
- Our work with licensees has improved metering and monitoring infrastructure to reduce overuse and the risk of saline up-coning and intrusion.
- Licence compliance activity has increased, particularly where the risks associated with groundwater use are high.
- Monitoring and metering data provided by licensees has improved our understanding of the Superficial aquifer.
- The Myalup-Wellington Water for Food project was launched and will assist proposed agricultural expansion in the Myalup and Wellington areas using alternative water sources and management of groundwater levels and salinity.
- Findings from the Royalties for Regions South West groundwater assessment will improve our understanding of the aquifer and produce better groundwater management outcomes.

Status of water use

Of the 30 gigalitres per year (GL/yr) allocated to the Kemerton plan area, there is approximately 12 GL/yr in six resources available for licensing. Approximately 53 per cent of the licensed use is for irrigated agriculture and 20 per cent is for industry.

You can view the latest water allocation and availability information on our online water register at atlases.water.wa.gov.au/ags/waterregister/

Kemerton Industrial Park

In 2013 the department amended the subarea and resource boundaries in the Kemerton plan area (see Figure 1). This change divided the Kemerton Industrial Core from the former Kemerton North and Kemerton South subareas to provide improved water security to the Kemerton Industrial Park.

Demand for groundwater in the Kemerton Industrial Core subareas did not grow as predicted due to the relatively low number of tenants in the Kemerton Industrial Park. There is approximately 9 GL/yr of groundwater available from the Cattamarra Coal Measures aquifer to meet future demand in the Kemerton Industrial Core subareas.

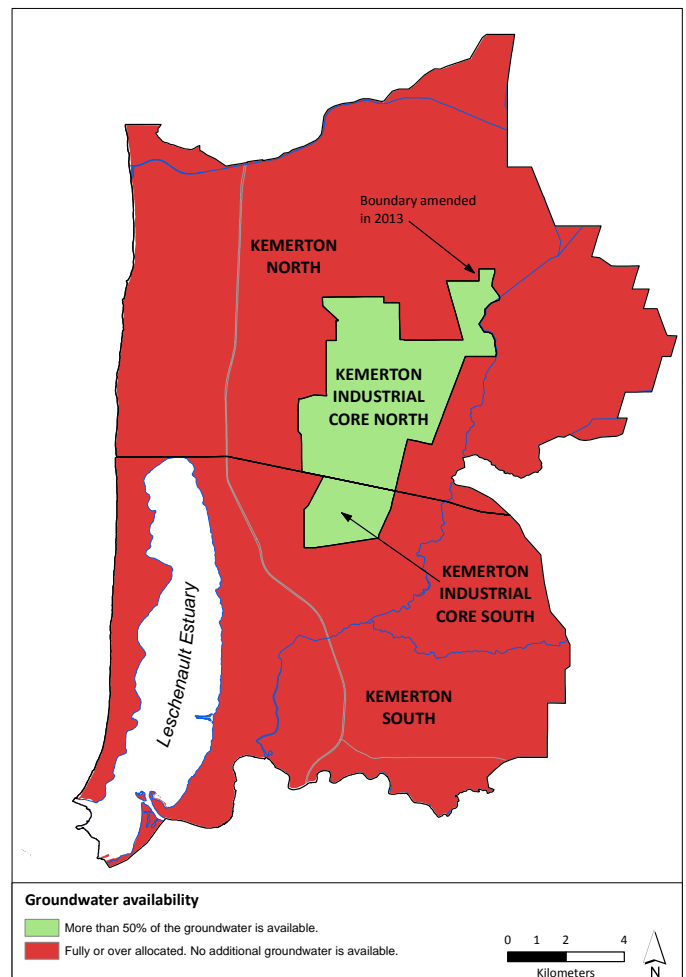
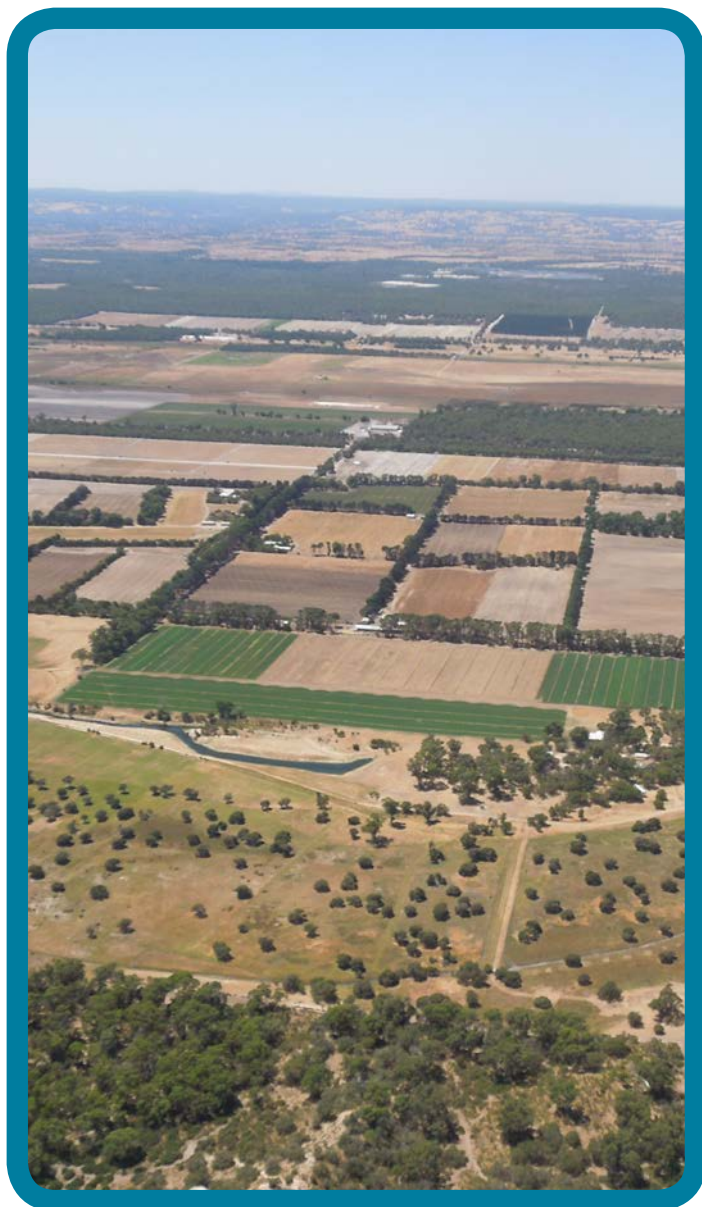


Figure 1: Groundwater availability in the confined aquifers

(View the water register for the latest water allocation and availability information on atlases.water.wa.gov.au/ags/waterregister/)



Myalup Irrigated Agriculture Precinct and surrounds

Water from the Superficial aquifer in the Myalup subarea and the western part of the Kemerton Industrial Park subarea, is primarily used for crop irrigation in the Myalup Irrigated Agriculture Precinct. The Superficial and Leederville aquifers are either fully allocated or over-allocated in the Myalup, Australind and Kemerton South subareas. Water remains available in the northern subareas in the Superficial aquifer (see Figure 2).

To meet the short-term needs of the Myalup Irrigated Agriculture Precinct we granted temporary access to the public water reserve in the Kemerton North subarea-Leederville aquifer. Approximately 2 GL/yr of the public reserve is licensed for short-term use, with less than 0.5 GL/yr of water remaining. Temporary access is available until 2020. After 2020, we will review use of the public water reserve for the medium- to long-term needs of the expanding population in the Greater Bunbury Region.

The department launched the Myalup-Wellington Water for Food project in February 2015. This project aims to identify additional water to supply long-term food production in the Myalup Irrigated Agriculture Precinct and the Collie River Irrigation District by investigating new water resource options.

Through this project, a Myalup and Kemerton groundwater model will be constructed. The model will improve our understanding of Superficial and Leederville groundwater resources and will be used to inform future groundwater management.

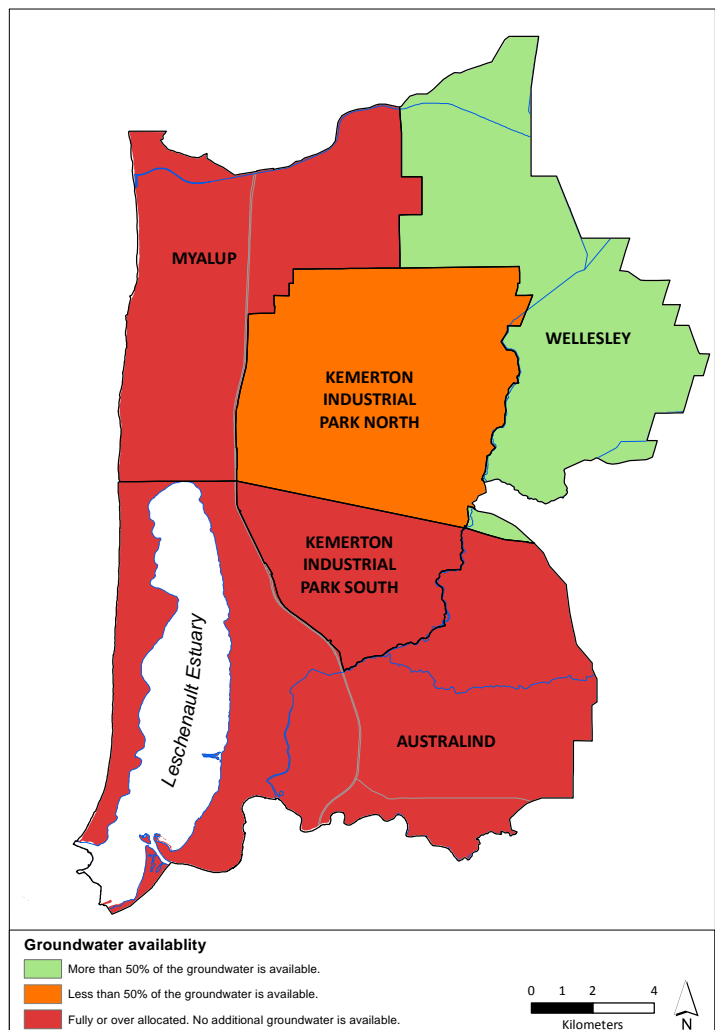


Figure 2: Superficial groundwater availability

(View the water register for the latest water allocation and availability information on atlases.water.wa.gov.au/ags/waterregister/)



Urban development and other agricultural areas

Urban development in the Kemerton plan area has relied on groundwater to irrigate public open space. However, in Myalup and Australind, the two largest urban areas in the Kemerton plan area, there is no additional groundwater available. Future urban development in these areas will rely on improved water use efficiency and will need to secure an irrigation supply from water trading or an alternative water source.

Most of the agriculture in the Australind subarea is irrigated with surface water from the Collie River Irrigation District.

Groundwater use is relatively low in the Wellesley subarea and groundwater remains available. Groundwater in this area is mainly used for mining and irrigating the golf course.

Status of water resources

Drying climate, and the resulting decline in groundwater recharge and groundwater levels, is affecting the south-west of Western Australia. In the Kemerton area, declining groundwater recharge is a key issue for the Myalup Irrigated Agriculture Precinct.

The monitoring and metering data collected by local licensees and the department for the Myalup Irrigated Agriculture Precinct shows that in the Superficial aquifer, salinity levels are increasing and groundwater levels are declining (see Figure 3).

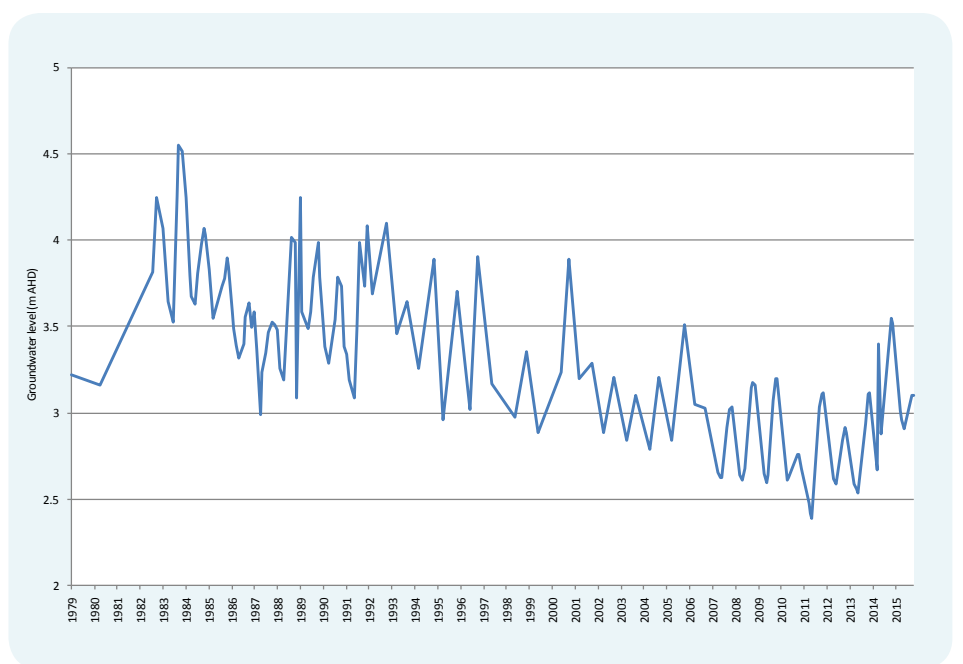


Figure 3: Long-term Superficial groundwater level at monitoring bore 61319179 in the Kemerton plan area

Over the last five years, groundwater salinity has increased, due to recycling of fertiliser salts, landward movement of the saltwater interface and exposure of acid sulfate soils. Reduced recharge due to the drying climate and modified drainage and groundwater use, all contributed to the declining groundwater levels and exacerbate the water quality issues (see Figure 4).

These issues pose a risk to long-term groundwater integrity for the Myalup Irrigated Agriculture Precinct and some important groundwater-dependent ecosystems. The Myalup-Wellington Water for Food project will identify groundwater management options to improve the long-term sustainability of groundwater.

Our response and future planning

The department will continue to adapt its management to meet the challenges identified in this evaluation:

- Through the Myalup-Wellington Water for Food project, the department will increase the number of monitoring bores and use new geophysical and groundwater modelling studies to improve groundwater management for the Myalup Irrigated Agriculture Precinct and Kemerton Industrial Park.
- Information collected from the Myalup-Wellington Water for Food project and Royalties for Regions South West groundwater assessment will be used to inform our licence assessment to better manage salinity and declining groundwater levels.
- The department will continue to recover over-allocated resources, promote water use efficiency and communicate with stakeholders.
- This will be the last evaluation statement published for the Kemerton plan. Future evaluations will be conducted as part of the evaluation of the South West groundwater areas allocation plan which includes the Kemerton area.

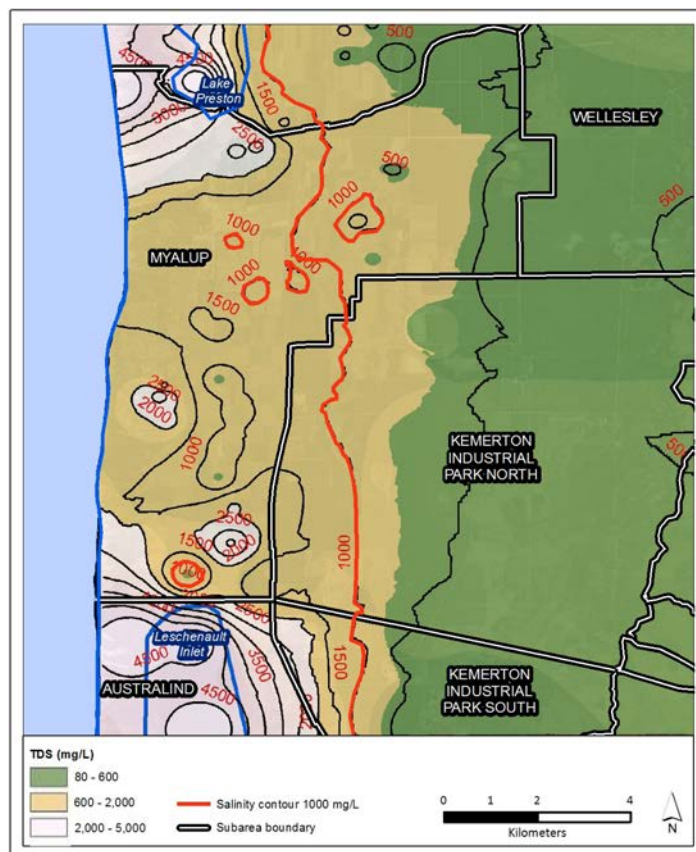


Figure 4: Salinity mapping for Myalup and up gradient areas

Salinity below 1000 mg/L (red contour) is considered optimum growing conditions.

Further information

For further information on the Kemerton groundwater subareas: water management plan visit www.water.wa.gov.au/planning-for-the-future/allocation-plans/south-west-region/kemerton-groundwater-subareas-water-management-plan.

For licensing information, please contact our South West regional office in Bunbury by phone on 08 9726 4111 or by emailing bunbury.admin@water.wa.gov.au

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

Further information on Water for Food is available from the website www.waterforfood.wa.gov.au/ or by emailing Atrium.Reception@water.wa.gov.au

Bunbury regional office
35-39 McCombe Road,
Bunbury WA 6230
PO Box 261, Bunbury WA 6231
Phone: 08 9726 4111
Fax: 08 9726 4100
Bunbury.admin@water.wa.gov.au

Department of Water
168 St Georges Terrace
Perth Western Australia 6000
Phone: +61 6364 7600
Fax: +61 6364 7601

www.water.wa.gov.au
National Relay Service: 13 36 77
© Government of
Western Australia February 2016