



BUSSELTON WATER

The world below our feet – Busselton's most precious reserve

Groundwater has always been an important part of our state's water supply. Western Australians have relied on this natural resource for decades. But for the Busselton community, it's more than that – we simply can't live without it.

Each year, our region and its visitors use 5.4 billion litres of fresh drinking water. But did you know that all of this water comes from groundwater?

That's right. In Busselton, 100 per cent of our drinking water comes from groundwater. It is pumped from the Yarragadee aquifer by Busselton Water to homes and businesses across our region.

In Perth, less than half of all fresh water comes from groundwater, with desalinated water, dams and other water sources used to 'top up' the public water supply. But in Busselton, groundwater is our only source of drinking water.

So what is groundwater?

Groundwater is water that flows beneath our feet – located out of sight, below ground level, within the cracks and spaces in soil, sand and rocks.

Groundwater is stored in natural reservoirs called aquifers. Aquifers are not underground lakes, by layers of fractured granite, gravel, sand or limestone with enough space to allow water to flow through the particles.

When it rains, the rainwater seeps down into the aquifers and is 'stored' in this sand and rock material.

Our region's groundwater system comprises three aquifers – the Superficial aquifer and the deeper Leederville and Yarragadee aquifers:

- the **Superficial** aquifer - the shallowest aquifer closest to the surface, which often shows itself as wetlands or lakes.
- the **Leederville** aquifer, which sits below the Superficial aquifer and is several hundred metres in depth.
- the **Yarragadee** aquifer, the oldest and most important aquifer for our region, from which we source all of our drinking water supply.

The Superficial aquifer is mostly accessed to provide water for industry, horticulture, public open spaces (like parks and ovals) and garden bores, while the deep aquifers are primarily used by public water suppliers (like Busselton Water) for drinking water supply, as well as agriculture and industry.

The Leederville and Yarragadee aquifers are 'confined' aquifers, meaning there are aquitards (layers of rock or clay that are generally not porous) above them prevent water from easily moving vertically. Water pressure builds up in these aquifers.

In areas where there are no aquitards, the aquifers are connected to each other and water moves more freely between them.

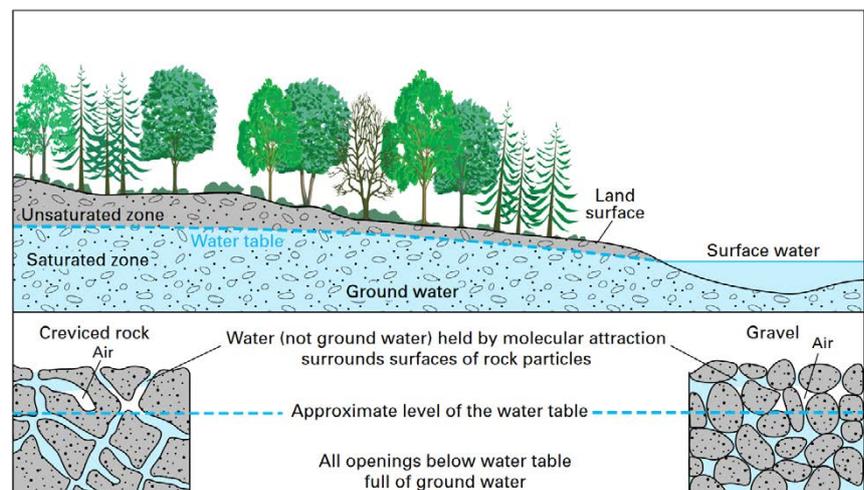


Image credit: USGS.

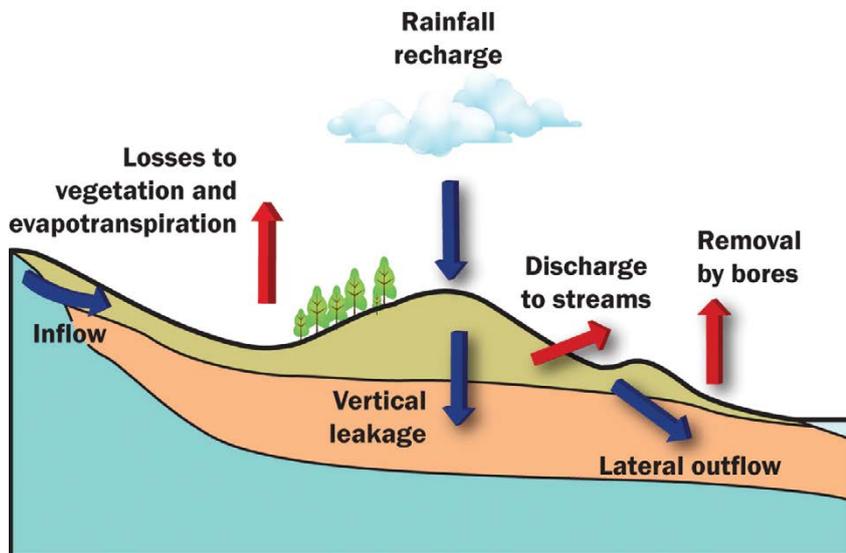
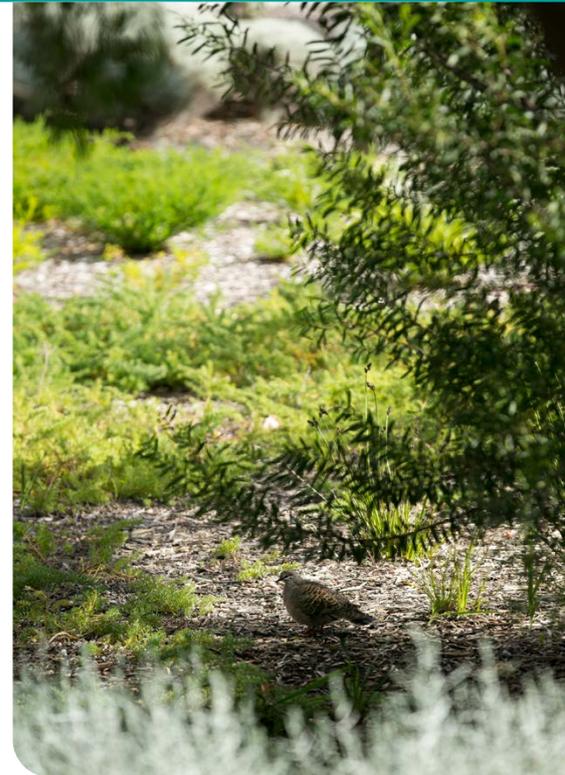


Image credit: Groundwater Hub of Southern Victoria.



Aquifer replenishment

All aquifers gain and lose water – known as recharge and discharge.

How is water recharged into an aquifer?

- Rainfall
- Ground seepage from surface water bodies (such as streams, rivers and other catchments)
- Recharge from another adjacent aquifer

How is water discharged from an aquifer?

- By flowing through the aquifer until it reaches a discharge point (such as rivers, wetlands or the ocean)
- By flowing into another connected aquifer
- If the groundwater is stored very close to the surface, it can evaporate or be used by trees and other vegetation
- Extracted by bore pumps

Our groundwater is under threat

Groundwater replenishment is reliant on rainfall – so climate change is having a profound effect on our groundwater supply in the South West region.

Hotter summers and lower rainfall mean our aquifer is not replenished as much, or as frequently, as it once was.

Groundwater is a highly valuable – but very limited – resource. It supports the social, environmental and economic needs of our community and must be conserved and protected.

We all need to use groundwater wisely – our local community, tourists and visitors, government, businesses, industry and households all have a role to play to protect our precious groundwater.

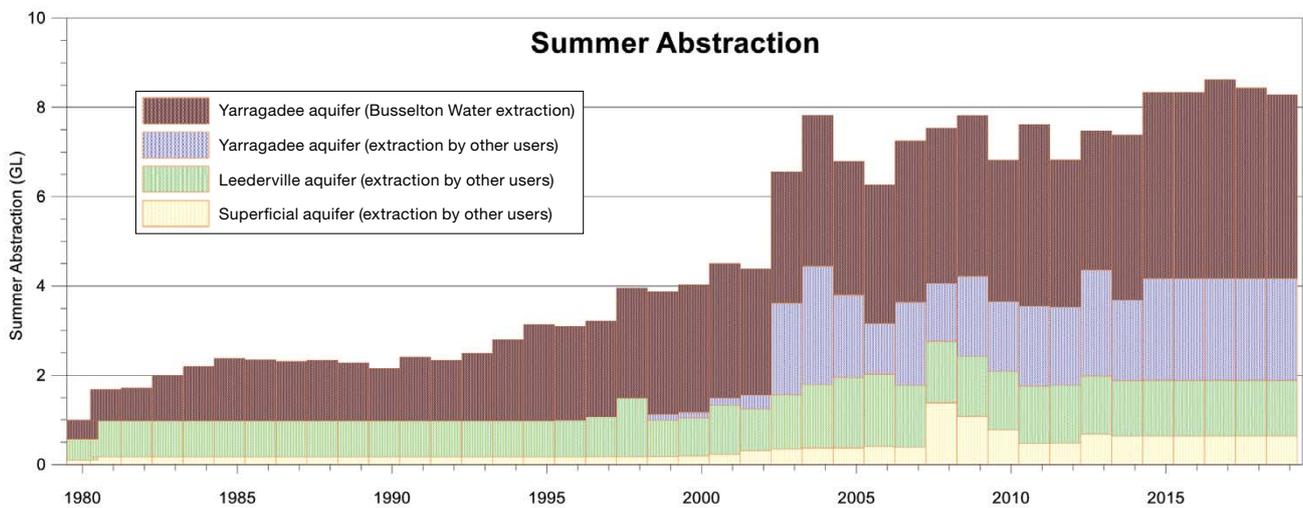
Overuse can put additional pressure on the groundwater system and can lead to water quality problems, including saltwater intrusion.

Did you know?

The Department of Water and Environmental Regulation is responsible for allocating and licensing groundwater use in Western Australia. There is a limit on the amount of groundwater that Busselton Water can take from the Yarragadee to supply drinking water to our community. This is why, together, we must work to reduce the amount of groundwater being used.

Did you know?

Busselton Water is just one of the users of groundwater in our region. Abstraction from the Yarragadee and Leederville aquifers has increased over time, with licenses to extract groundwater provided to mining, agriculture, irrigation and other industries.



References: Anderson, D.J., 2017: Coastal Groundwater and Climate Change, WRL Technical Report 2017/04

