

Saltwater intrusion and its impact on Busselton's water



Busselton exudes a coastal city lifestyle. Every year, tens of thousands of tourists are drawn to our spectacular turquoise beaches and the iconic Busselton Jetty.

Our community, too, has a deep love of the coast and embedded culture linked to water, with the majority of our population of more than 40,000 people living near our coastline.

Busselton's drinking water is extracted from our groundwater sources, using a coastal borefield comprising nine bores. Our fresh water supply is under threat of saltwater intrusion.

What is saltwater intrusion?

Several hundred metres below surface level, the groundwater our community uses for drinking water is stored within the rocks, clay and sand within the Yarragadee and Leederville aquifers. Rainfall seeps into the groundwater aquifers and slowly flows underground to the ocean, or returns to the surface as a catchment or other body of water before reaching the ocean.

This fresh water stored underground has an interface near the shore where fresh water and salty ocean water meet.

If groundwater bores draw more water out of the ground than the amount that is naturally replenished by rain, groundwater levels reduce and the salty ocean water moves inland and mixes with the fresh groundwater.

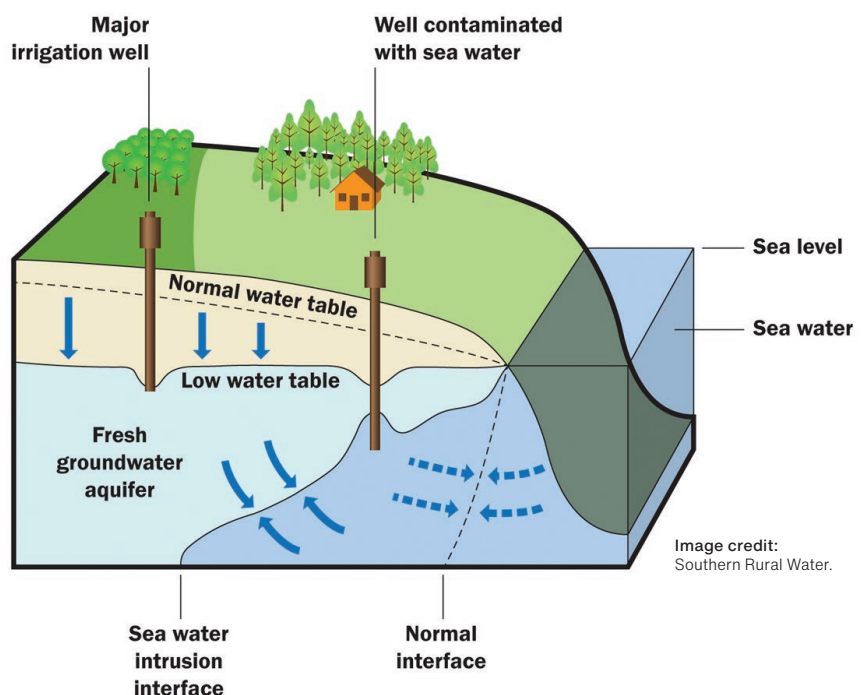


Image credit: Southern Rural Water.



The impact of saltwater intrusion on Busselton's water supply

Busselton's bores – which run between 150 metres to 700 metres in depth – traditionally draw some of the highest quality fresh water in the country.

However, population growth and climate change impacts are resulting in groundwater levels reducing and the salty water moving inland. This means our bores that were once well-positioned to draw fresh drinking water will start to draw saltier, unusable water.

What is Busselton Water doing to combat saltwater intrusion?

Mindful of our region's population growth and growing demand for water, Busselton Water continues to monitor and model our drinking water bore network in partnership with specialist hydrologist, Rockwater.

The modelling shows that saltwater intrusion caused by climate change has already started to impact our drinking water sources. Lower rainfall in our region had resulted in coastal saline water migrating into the Yarragadee aquifer.

As time progresses and the impacts of climate change continue to be felt, this is will worsen and within 50 years, our coastal bore network will no longer be able to supply the same high quality water it does today.

Without action or treatment, the fresh water we draw from our bores, over time, will become unsuitable for drinking.

Building a sustainable water future

Busselton Water is taking saltwater intrusion very seriously. We are working to prevent the impacts of sea water intrusion into our groundwater through waterwise education, a strong commitment to water efficiency education with our customers and community and looking at alternative water treatment options such as Managed Aquifer Recharge.

Securing a sustainable water future for the Busselton community will also require meticulous planning – managing growth and demand with new infrastructure, including an inland borefield and new treatment plants.

We are also working closely with the Department of Water and Environmental Regulation to secure public drinking water allocations to meet our region's future water needs.

Did you know?

Fresh water contaminated with only 5% of seawater makes it unusable for many beneficial purposes, including supplies for drinking, irrigation of crops, parks, gardens, golf courses and for groundwater dependent ecosystems.

(Timmins et al. 2008)

