



THINK water!



Groundwater – The Situation

The general Perth area has an underground geology which includes large areas of deep sand and limestone. Rain falling over this area and running off the hills builds up underground as a shallow semi-freshwater aquifer, which is easily available for most household bores.

However in the general area of the Cottesloe Peninsula, with the Swan River on the east side and the Indian Ocean to the west, the freshwater aquifer is cut off from the rest of the metropolitan area and sits above the saltwater level connecting the river and sea.

The freshwater aquifer is renewed each year with rainfall, particularly in winter, plus the odd leaking water pipe. With rainfall continuing to decline in Perth and more homes being equipped with bores, the pressure on the restricted Cottesloe aquifer is growing.

Reducing winter rainfalls long, dry summers, increased use of bore water have created a threat to ongoing bore water use. In simple terms, the message must now be *“Cut back your use of bore water or you may start pumping salt water”*.

Water Quality

Apart from the potential for the freshwater aquifer under Cottesloe to build up in salt content, the quality of groundwater can be affected in other ways:

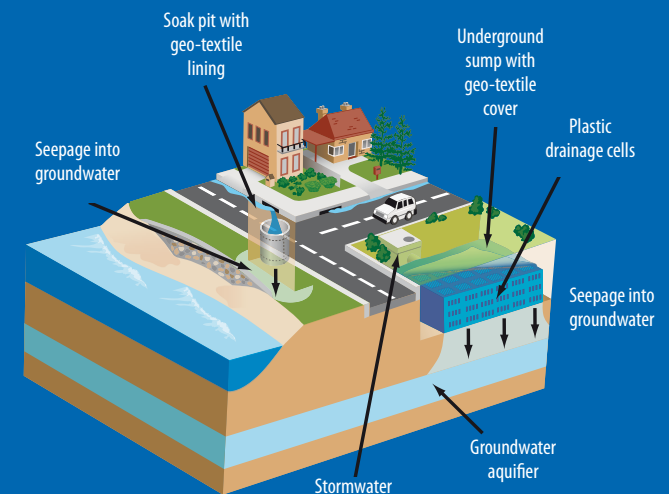
- The use of lawn and garden fertilisers heavy in phosphate content is a major issue in Perth. Phosphates easily soak through the sand plain into the aquifer, river, ocean, creeks and swamps. This results in aquatic life dying and the growth of dangerous algae in freshwater lakes and rivers.
- Oils, paint thinners, various workshop chemicals – if poured into the sandy soil – will soak through to the aquifer and create long term pollution issues.
- Heavy metal particles are dangerous to our health, as are hydrocarbons. These come particularly from vehicle fuel systems, brake linings and exhaust systems. When parked on private driveways and car ports, such material will wash into your private soak pits and eventually into the aquifer. Remember to clean out your pits annually, to remove any leaf and pollutant build up. This will also aid in the efficiency of your soak pits and reduce internal flooding problems.



Groundwater Restoration Project

The Town of Cottesloe Engineering Services is undertaking this project which involves the replacement of open sumps with seven new underground sumps equipped with pollution traps and 400 new soakage pits throughout Cottesloe to trap and filter stormwater, and then replenish the Cottesloe groundwater aquifer with the treated stormwater.

Utilising stormwater to replenish the groundwater also enables the closure of 10 stormwater outfall pipes along the coast, thus removing pollution from the foreshore and using this previously lost drainage water to further recharge the aquifer.





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Key Tips for Water Saving on the Cottesloe Peninsula

- **Consider how to reduce your reliance on bore water.** Reducing rainfall means less water going into the underground aquifer. Modern gardens use of bore water means more water is being pumped out with new house redevelopments in Cottesloe. The result will be the eventual intrusion of salt water into the fresh water aquifer, as that aquifer shrinks, possibly never to be restored. A reduction by many users will provide the chance to retain the bore water availability for all.
- **Reuse water from the home in the garden.** Greywater, water from down pipes connected to your house gutters, water saved from showering with a bucket etc.
- **Design gardens and landscaping to enhance maximum absorption of rainfall into the groundwater table, and minimise evaporation.** Use of native garden beds, mulch, sub surface irrigation etc.
- **Reduce your use of fertilisers, chemicals etc** which can contaminate groundwater, particularly high phosphate content fertilisers.
- **Reduce water use through a variety of water saving mechanisms** – in the home and garden.



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Extracting Groundwater in Cottesloe