

❖ Surface water sources

» Dams and reservoirs



For thousands of years, humans all around the world have built weirs, dams and reservoirs to maintain reliable water supplies. Dams provide much of Queensland's water; they are vital for our lifestyle and economy. They provide water for irrigation and recreational use, and help reduce flooding.

Where possible, dams are located higher up in the catchment than the users who take water from them. Where there is a height difference, the natural force of gravity maintains the water pressure in the network of pipes (the reticulated water distribution system) leading from the treatment plant to the user. Where there is no such height difference, pumps have to be used to pressurise the reticulation system.

However, dams and weirs also have some detrimental impacts on the natural environment, such as changing the natural water flow regime in rivers and, unless special races or channels are built into the wall, acting as barriers to fish migration.

Queensland has 99 large dams with a combined storage capacity of more than 10 million megalitres (ABS, 2004a). Burdekin Falls Dam supplies water for irrigation within North Queensland. It is Queensland's largest dam, with a water capacity of 1.86 million megalitres

(equal to 744 000 Olympic swimming pools). Over 75% of the water used in South East Queensland comes from three dams: Wivenhoe, Somerset and North Pine.



Picnic Point Reservoir, Toowoomba

As rainfall and, consequently, streamflows vary from season to season, and from year to year, dams help to maintain adequate supplies of water. Dams are wholly reliant on rainfall in their catchment to maintain water levels. During extended dry periods and drought, dam water levels drop because water is continuously being taken from the dam, but there is insufficient rainfall to replace what has been taken. A great deal of water is also lost in evaporation from the large surface area of water exposed to the sun. Residents of South East Queensland have been faced with diminishing dam levels for some years. In 2007 the combined levels for the three major dams in the region reached a critical level, dropping to 17% of water-holding capacity at their lowest point.

» Rainwater tanks

Installation and use of rainwater tanks is increasing, especially in urban areas. Tanks are installed to collect and store rainwater that would normally flow into stormwater drains. Water from rainwater tanks is not recommended for drinking and food preparation, but is recommended for watering gardens, washing cars, doing laundry and flushing toilets. The use of water tanks in urban and industrial areas is monitored to assess water quality, which may be degraded from pollutants, such as bird droppings and dust, on roofs. Mosquitoes breed in rainwater tanks that are not fully insect-screened, so new rainwater tanks must be fitted with mosquito-proof screens or flap valves on every opening, including overflows.

Installing an internally plumbed rainwater tank can save up to 70 000 L of water per household per year. This water would otherwise have to be taken from the reticulated system.



» Recycled water

Water that has been used in houses and businesses is piped into sewerage systems as wastewater and pumped to sewage treatment plants. There, wastewater is cleaned and treated to different qualities depending on its source and intended use. This reuse is termed water recycling, reclaiming wastewater, or water reclamation. The use of recycled, reclaimed or reused water is part of Queensland's planning for the future and is undertaken to reduce demand on traditional drinking water sources such as dams. (Refer to Section 6, page 27, for more detail.)