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Fact Sheet

# What is a Dam ?

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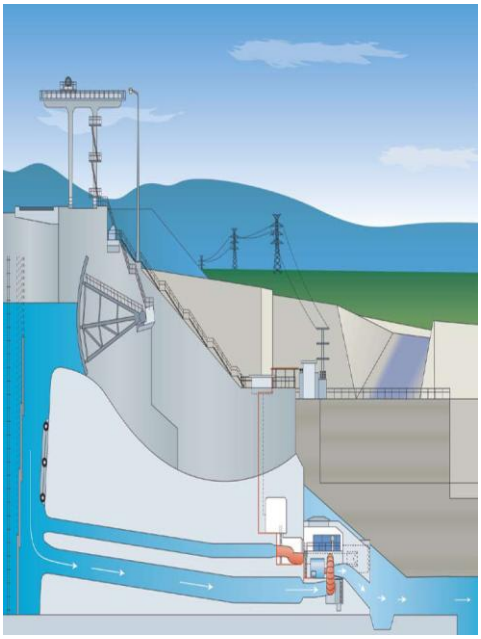
## What is a dam?

A dam is a wall of solid material built across a river valley or catchment to block the flow of the river. The dam wall creates a lake and allows water to continue flowing down steam of the dam. Dams create a permanent supply of water for the community to use. The dam must be watertight so it is safe and stops water from escaping downstream and the walls must be strong enough to resist water pressure. The higher the dam, the greater the depth of water stored behind it, and the greater the water pressure on the dam wall.

A dam must have a way of releasing water in controlled amounts so people can use it. Water is released into a network of pipelines that supply homes, businesses and farms with water.

If it rains heavily, or if the river floods, water can escape over a concrete 'spillway' and into the river downstream. A spillway is usually built at the side of the dam wall. Dams also can have large steel release gates or come valves to allow water to flow out when required. If the dam is built of concrete, water can even flow over the dam wall.

Some dams are constructed to provide flood mitigation while others are for drinking water storage and others to produce Hydro electricity.



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## How are dams built?

Each dam is different – some are small and deep, some are shallow and wide. It all depends on the size of the river and shape of the valley. Dams can be made from different materials. There are two main types of dams.

- Concrete dams are made of strong, solid concrete walls that resist the pressure of water;
- Earth and rock fill dams have a solid core of clay in the middle to prevent water leakage, and an outer layer of rock for strength.

## Dams and the environment

A dam built across a river will impact the river valley. Plants, animals, roads, farms and sometimes even towns will be flooded. The flow of a river downstream will also be disrupted, and fish and wildlife may be threatened. This is why all modern dams undergo strict environmental controls to minimise their environmental impact.

Some ways to reduce the environmental impact of dams are:

- Working with the local community to relocate houses and roads
- Keeping trees and vegetation in the valley to stop soil erosion into the dam lake
- Preventing noise, dust and pollution during construction
- Relocating wildlife or special cultural sites in the catchment area
- Building water 'ladders' around the dam wall so fish can swim upstream or downsteam
- After the dam is built, regularly releasing water to keep the river healthy

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There are 183 key storage locations across the State. These represent a total capacity of 13,389 GL for Queensland. This does not include privately owned off-stream storage sites used for water harvesting.[3]

- Atkinson Dam
- Lake Awoonga
- Bamboo Dam
- Baroon Pocket Dam (Lake Baroon)
- Belmore Dam (Lake Belmore)
- Biggera Creek Dam
- Bill Gunn Dam (Lake Dyer)
- Bjelke-Petersen Dam (Lake Barambah)
- Boondooma Dam
- Boobir Dam, Blackbutt
- Borumba Dam
- Bromelton Offstream Storage
- Burdekin Dam
- Burton Gorge Dam
- Callide Dam
- Cania Dam
- Cedar Pocket Dam
- Clarendon Dam (Lake Clarendon)
- Connolly Dam
- Cooby Dam
- Coolmunda Dam
- Cooloolabin Dam
- Coombabah Lake
- Copperlode Dam (Lake Morris)
- Corella Dam
- Cressbrook Dam
- East Leichhardt Dam
- E.J. Beardmore Dam
- Enoggera Dam (Enoggera Reservoir)
- Eungella Dam
- Ewen Maddock Dam
- Fairbairn Dam
- Fred Haigh Dam (Lake Monduran)
- Gattonvale Offstream Storage
- Glenlyon Dam
- Gold Creek Dam
- Gordonbrook Dam
- Hinze Dam, Gold Coast
- Ibis Dam
- Irvinebank Dam
- Julius Dam (Lake Julius)
- Kidston Dam (Copperfield Dam)
- Kinchant Dam
- Kroombit Dam
- Koombooloomba Dam
- Lake Kurwongbah
- Lake Gregory (Queensland) (Isis Balancing Storage)
- Lake Manchester
- Lenthalls Dam (Lake Lenthall)
- Leslie Dam
- Leslie Harrison Dam
- Little Nerang Dam, Gold Coast
- Maroon Dam
- Middle Creek Dam
- Moogerah Dam (Lake Moogerah)
- Moondarra Dam (Lake Moondarra)
- Meandu Creek Dam
- North Pine Dam (Lake Samsonvale)
- Number 7 Dam (Big Dam No7, Mount Morgan)
- Paluma Dam
- Paradise Dam
- Perseverance Dam
- Peter Faust Dam (Lake Proserpine)
- Placer Dam
- Poona Dam
- Return Creek Dam
- Rifle Creek Dam
- Ross River Dam
- Six Mile Creek Dam (Lake MacDonald)
- Solomon Dam
- Somerset Dam
- Southedge Dam
- Splityard Creek Dam
- Stannary Hills Dam
- Storm King Dam
- Tallebudgera Creek Dam
- Teemburra Dam
- Theresa Creek Dam
- Tinaroo Dam (Lake Tinaroo)
- Teviot Creek Dam
- Wappa Dam
- Wild River Dam (Herberton Dam)
- Wivenhoe Dam (Brisbane's main dam)
- Wuruma Dam
- Wyaralong Dam (Completion

# What is an aquifer?

Aquifers are natural stores of water in the ground. They are generally found in porous types of rocks such as sandstone, conglomerate, sand and gravel. Groundwater from the surface filters down through the soil and fills some types of aquifers.

A hole drilled from the surface into the ground can penetrate an aquifer. Normally water must be pumped to the surface but some aquifers can force water up bore holes by pressure.

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## How does an aquifer work?

An aquifer is usually filled with water from the ground. Some aquifers are big and some are small. The amount of water in the aquifer can vary from season to season and year to year. Depending on the permeability of rock, groundwater can seep through an aquifer quickly at a rate of 20 metres per year or slowly at 20 centimetres per century, depending on the permeability of the rock.

## Is water in aquifers clean?

Aquifers are natural filters that trap sediment and other particles (like bacteria) and provide natural purification of the ground water flowing through them. Some aquifers contain high levels of salt and minerals and may need to be filtered. If you drink water from an aquifer, it often tastes different.

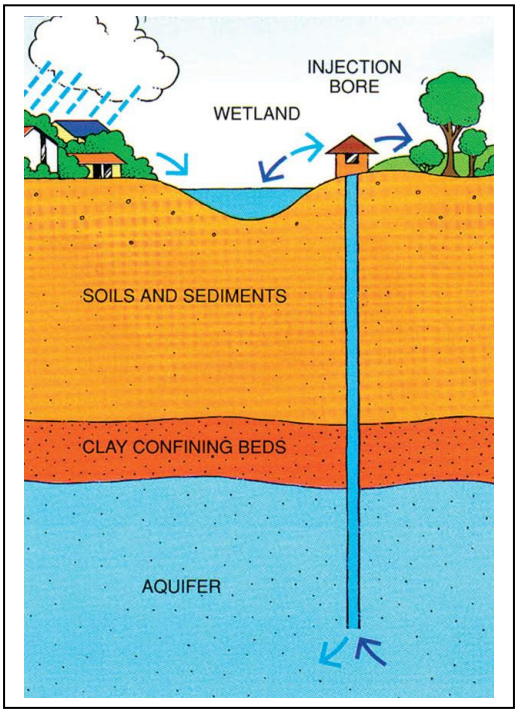
## Are there aquifers in the Gold Coast and Brisbane regions?

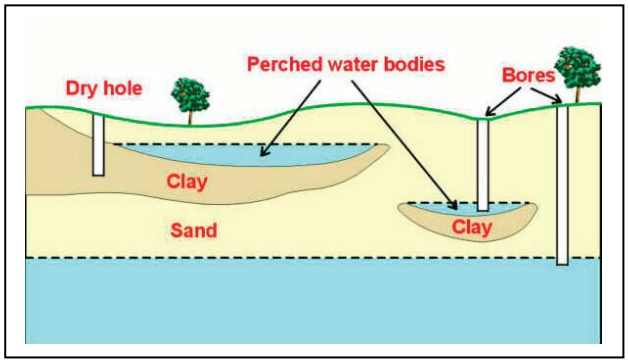
There are aquifers in the Woongoolba/Norwell region in the northern part of the Gold Coast and in several regions around Brisbane, such as Redlands. Water is used mainly for irrigation.

In some Australian communities aquifers are the only source of drinking water. Over 100 towns and cities in Queensland use water from aquifers for their drinking water supply. Major cities such as Perth and Newcastle have used groundwater supplies for many years as part of their town water supply system.

## How can aquifer water be used?

Water can be used for drinking, watering lawns and gardens, or to irrigate crops, depending on its quality. Bores can be connected to pipes and water pumped to treatment plants or other storage facilities.

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