

Fitzroy River Barrage

The Fitzroy River Barrage (Barrage) helps to create the largest storage in the local area. The Barrage storage is the water source for the town of Rockhampton and surrounding areas of Gracemere, The Caves and Nerimbera in addition to supplying agriculture water to 292 registered rural users.

The Fitzroy Barrage and the Glenmore Water Treatment Plant were constructed in 1970 and 1971 respectively to meet the long-term water supply needs of Rockhampton. The Barrage separates the fresh water upstream from the tidal salt water downstream and has a storage volume of 81,300 megalitres (of which approximately 21,900 megalitres is dead storage or water that is not available for use or diversion).

If water allocations are drawn from the Barrage storage at the maximum approved amounts, the Barrage will hold sufficient water to supply the Rockhampton area for at least nine months without any run-off into the river over its vast catchment.

History of the Barrage

Prior to the commissioning of the Barrage and the new water treatment plant at Glenmore, Rockhampton's water supply was obtained from a pump station built at Yaamba above the tidal influences of the river. Raw water was pumped from Yaamba to the Mount Charlton Water Treatment Plant near The Caves township for treatment and then flowed via gravity to Rockhampton. By the late 1950s and early 1960s because of population growth it became clear that Rockhampton could not survive on the 30ML (30 million litres) a day supplied by Yaamba. This caused the Barrage concept, originally canvassed in the 1920s, to be revisited.

Work began on site preparation in September 1966 with construction of the Barrage completed in early 1970. In March 1970, the Premier of Queensland, Joh Bjelke-Petersen, opened the Fitzroy River Barrage.

The Barrage was constructed at a total cost of approximately \$3.5 million and together with the construction of the Glenmore Water Treatment Plant, in excess of \$6 million was invested to provide a secure water supply for the community.

Purpose of the Barrage

The Fitzroy River Barrage was built to meet the long-term water supply needs of Rockhampton. It separates the fresh water upstream from the tidal salt water downstream to create a water storage that extends approximately 60 km upstream with a combined volume of approximately 80,300 ML when full. The Barrage storage supplies raw water for the Glenmore Water Treatment Plant which supplies up to 120 ML of high quality drinking water to the local community.

Water source and allocation

Rockhampton Regional Council holds a 50,383ML high reliability allocation within the Barrage storage. Each year Council uses approximately half of this allocation for the supply of drinking water or for the supply of un-treated irrigation water to many rural users located upstream of the Barrage storage.

The careful operation of the Barrage and this valuable water storage is managed by Fitzroy River Water in accordance with Queensland Government legislation.

High priority water, used for urban and industrial applications, is required to be 95%-100% reliable and medium priority water, often used for irrigation, 82% – 88% reliable.

The Barrage storage has a reliability of supply of greater than 99%. This is due to the very large catchment of the Fitzroy Basin and the relatively reliable rainfall patterns within the catchment area that almost always provide river flows to replenish the Barrage storage each year. It is estimated that the Barrage storage would have been replenished in all but one of the last 160 years.

The Stanwell Power Station draws approximately 20,000ML of high priority water from the Barrage storage each year. This 20,000ML is stored in the upstream Eden Bann Weir, approximately 80km upstream of the Barrage, as part of a 24,000ML allocation held by Stanwell Corporation. Water is released from Eden Bann Weir as required to keep the Barrage storage close to full supply level. This enables the Stanwell Power Station to pump the water it needs for its operation directly from the Barrage storage.

Operation

Fitzroy River Water is the Resource Operations Licence Holder for the Barrage storage and is required to operate the storage in accordance with the requirements of the Fitzroy Resource Operations Plan (January 2004). This requires releases to be made at certain times to meet environmental flow requirements including operation of the fish ladder.

Monitoring of water quality, including blue green algae, is an important of making sure that the water in the Barrage storage is fit for purpose to meet the needs of the community.

The Barrage separates fresh water from salt water by the operation of 18 vertical lift gates. The Barrage is remotely controlled and monitored by a Supervisory Control and Data Acquisition (SCADA) system. Operation of the gates is carried out automatically with the gates opening or closing to maintain the upstream water storage level at a pre-determined height or to lift above the level of major flood waters in order to prevent the Barrage from being damaged.

A vertical slot fish ladder is located on the southern bank of the Barrage to aid the migration of fish from downstream to upstream of the Barrage. At full supply level, the fish ladder discharges 14 megalitres per day, as part of its normal operations. Currently work is being planned to improve the effectiveness of the fish ladder to ensure our valuable fishery is sustained. It is illegal to fish 400 metres upstream and downstream of the barrage. FRW provide footage of illegal activities to the relevant enforcement agencies so that these illegal activities can be prevented. Significant fines and further prosecution can result from these illegal activities.



The Fitzroy Barrage is shown during a major flood event. The Barrage gates can be seen raised well above the passing flood water.