



ALICE SPRINGS TOWN BASIN

What is the Town Basin?

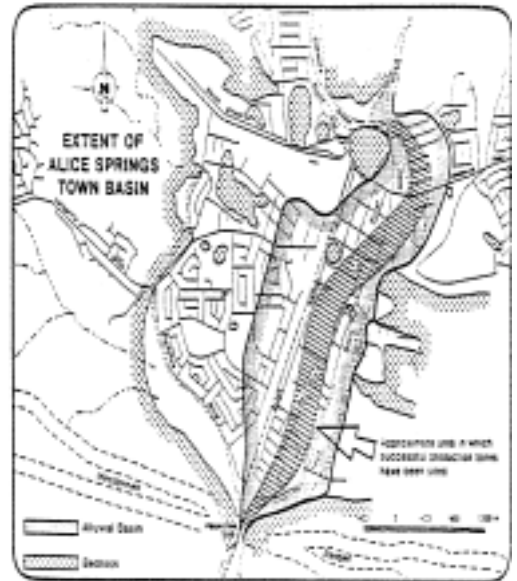
The central part of the town of Alice Springs is built over a small alluvial basin. This basin, cut into basement rock by the scouring action of the Todd River, has filled with silt, clay and sand. These sediments contain sandy zones which are capable of yielding useful supplies of water from wells and bores. The groundwater flows slowly to the south out of the basin beneath the surface through Heavitree Gap.

The Town Basin as a Water Supply

Alice Springs' first public water supply - the Town Wells, were sunk in the centre of the basin in 1939, however, many residents had their own private bores & wells prior to this. The Army increased the number of bores in the Basin during 1942/3, as water supplies were needed to support defence needs. An increasing population during the 1950s and the effects of drought necessitated further augmentation of bores to meet demand.

The heavy demand on the Basin began to deplete it and it became necessary to locate an alternative source. A new borefield was identified at Roe Creek and was commissioned in 1964.

By 1969 the Roe Creek borefield was the sole reticulated water supply for Alice Springs but some minor use of Town Basin water still continued. Since then all public use of Town Basin water has been for irrigation of sports grounds and open spaces, and extraction has gradually increased to the current estimated level of 800 megalitres per year (ML/yr). By comparison, over the same period the use of Roe Creek water has risen to approximately 12,000 ML/yr.



Salinity, and Water Levels

The major source of replenishment, or recharge, to the Town Basin is the Todd River, with the height and duration of the river flow key factors in determining the amount of recharge.

After several decades of pumping from the Basin and especially during the 1960's drought, the groundwater level had dropped significantly. A major recharge event occurred during 1974, when the Todd River flowed for a total of approximately 300 days, causing a dramatic rise in groundwater levels. The groundwater level has remained high, with only a gradual lowering since. As a result there has been limited space for recharge of better quality water from subsequent flows.

With the rise in water level the salinity of the groundwater also increased markedly, as the rising water dissolved and mobilised pre-existing salt in the soil profile of the Basin. Some dissolved salt is also pumped into town with the reticulated supply from Roe Creek, a large portion of which is used for irrigation. This has increased the salt levels of the soils in the town area.

Pollution Response Line

24 Hour Hotline

1800 064567 (Freecall)

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This pamphlet is one in a series on water resource topics in the Northern Territory.

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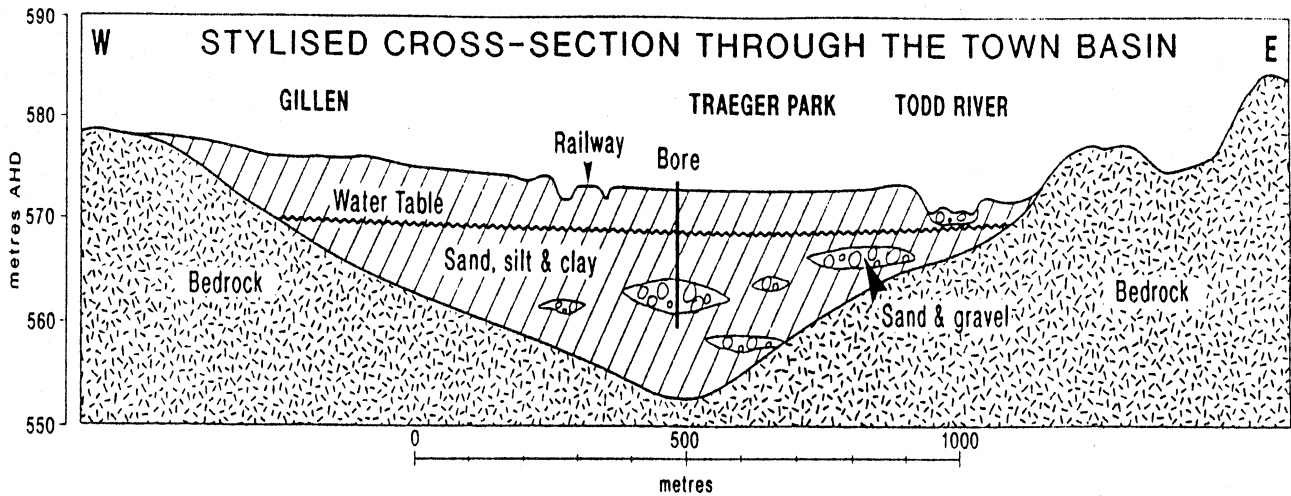


Northern Territory Government

Department of Infrastructure, Planning and Environment

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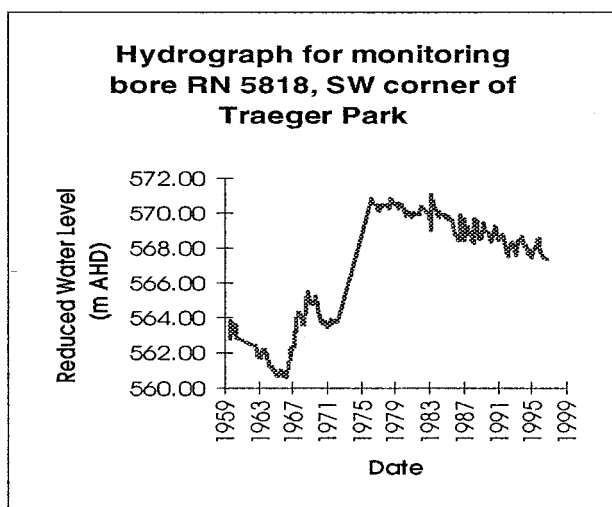
Although Alice Springs is a naturally saline environment and high salinity soils were present in the town area before settlement, a high water table and the associated increasing soil salinity produced a number of adverse effects. These included degradation of soils, retardation or death of vegetation, damage to roads, kerbing and building foundations, and a high water table may have been a contributory factor in death of River Gums in and adjacent to the Todd River.

Management of the Basin

The aim of the water management strategy is to increase the use of Town Basin groundwater, which is a renewable resource. This will help to reduce the currently unsustainable demand on Roe Creek borefield, and will also reduce the water level in the basin between river flows, allowing recharge of better quality water.

The PowerWater Corporation has constructed a pumping and distribution system which has increased water supply from the Town Basin for irrigation. Detailed monitoring and evaluation of groundwater levels, usage and salinity is being undertaken by the Conservation & Natural Resources. This will enable the effectiveness of the management strategy to be gauged.

An ongoing campaign to encourage the Alice Springs community to use less water is also in place. Recommended practices such as planting native gardens, drip irrigation, and night watering will all help reduce groundwater levels and salinity.



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www.ipe.nt.gov.au