

Uluru–Kata Tjuta National Park Note

Water

Kapi (water) is a scarce and precious resource in the arid environment and plays an important role in Anangu life.

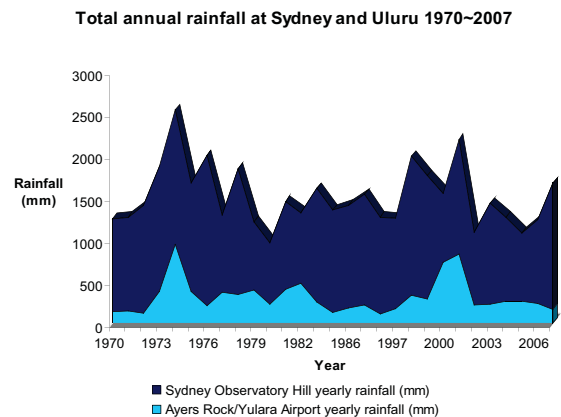
Where the water comes from

There are two types of water found within Uluru-Kata Tjuta National Park, surface water and groundwater. Although much of the water found in the area remains hidden below the ground, both groundwater and surface water play a vital role in supporting cultural and environmental values in the park. To understand water in the local region we need to first look at the climate.

Climate in an arid environment

The park is situated in arid Central Australia where rainfall is low and unpredictable, with the majority of rain falling between January and March. Evaporation rates of more than two metres per year mean water collected in temporary wetlands or creek lines soon dries up after the rain has stopped.

The graph shows the difference in annual rainfall between Sydney and Uluru from 1970 to 2006



Remarkable climatic events

Rainfall in the arid zone is highly variable, with some years receiving very low rainfall and floods in other years. Since 1980 the average rainfall for the park is 275 millimetres. Floods around the park have occurred in the summer of 1974, December 1988 to March 1989, and February 2000. Drought has occurred in 1965 where only 82 millimetres fell and in 1996 with 90 millimetres.

Cultural water values

Tjukurpa is the foundation of *Anangu* culture and provides both rules and behaviour for the care and use of waterholes. *Anangu* recognise three main kinds of watersources. The most reliable watersource is *tjukula* (large waterhole) sometimes the home of a *wanampi* (water snake), and *kapi wala* (spring). *Raalpa* (soaks) are a fairly reliable watersource that represents a local water table in the sand of a dry creek bed or in the soil next to a rock dome. Soaks are usually fed from an underground water supply and are protected from evaporation by sand or soil. The least reliable source is the *tjintjira* (claypan) which is particularly susceptible to evaporation.

Anangu consider all of these watersources to have continuous associations with *Tjukurpa* and are therefore an important part of management of the landscape.

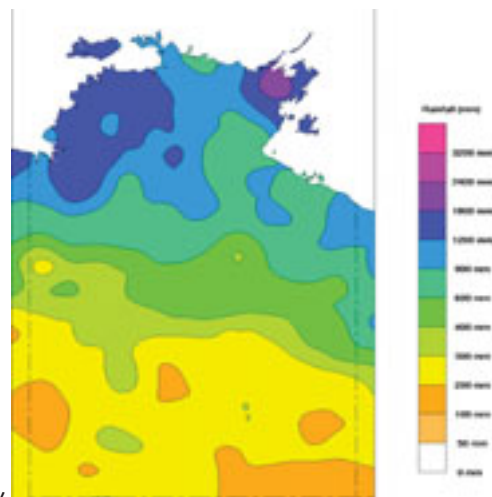
Surface water

There are temporary and reliable soaks and waterholes throughout the park, including *Muṯitjulu* Waterhole at the base of *Uluru*. Temporary areas of surface water exist for varying periods after rainfall in gorges, claypans and depressions.



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Left to right - Mutitjulu Waterhole is an important water source for Anangu and rainfall for the Northern Territory - 1 July 2008 to 30 June 2009 (Bureau of Meteorology)



Management of surface water

Surface water flow is important to vegetation communities and habitats and the placement of roads and infrastructure can potentially obstruct natural surface hydrology. The extraction of groundwater from regional aquifers needs to be managed to sustain groundwater-dependent surface water ecosystems.

Groundwater

Groundwater in the Southern Aquifer varies in age and bores sampled near Uluru contain ancient groundwater thousands of years old. These waters occur in deep, buried alluvial channels and in the fractures of deep rock systems. Other bores show some areas of groundwater were recharged within the last 50 years.

Water treatment and disposal

Water for drinking, cooking and other indoor uses is obtained by treating bore water. Wastewater from is treated using an activated sludge process at the Sewerage Treatment Plant.

The southern plains and dune plains aquifers

The first recorded bore accessing the Southern Aquifer was drilled in 1957 near Uluru. Managing groundwater use involves balancing what flows naturally (recharge) with what flows out naturally (discharge) and how much water is taken out by pumping (extraction). The Southern Aquifer is recharged directly by inflow of water through the soil, generally in response to large flooding events. The size of the Southern Aquifer is about 6,000 megalitres with an average annual recharge of 300 megalitres.

The general size of the Dune Plains Aquifer was investigated in 1978-1980 by drilling a series of investigation bores to determine whether there was a reliable drinking water supply to support Yulara. The exact size of the Dune Plains Aquifer is unknown meaning sustainable yield cannot be calculated accurately. It is estimated that the Aquifer stores between 38,500-90,000 megalitres of water. Yearly extraction is around 700 megalitres and this level is considered appropriate.

Shield shrimp

Shield shrimp (*Triops* sp.) is one of several shrimp sometimes found in temporary pools on the top of Uluru after rainfall. The eggs of these crustaceans are able to withstand drying, lying dormant until rainfall causes them to hatch.

The information in this park note was developed in conjunction with information provided in the Finding Water at Uluru-Kata Tjuta National Park information sheet produced by Department of Natural Resources, Environment, the Arts and Sport.



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